



THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-583, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

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Just write to:

MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg 5307
Redstone Arsenal, AL 35898-7466

Or e-mail to:

psmag@logsa.army.mil

Internet address:

<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:

ERIC K. SHINSEKI

General, United States Army Chief of Staff

Official:

Joel B. Hudson
JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
0110201

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From Korea to Vietnam...

...Kuwait to Bosnia...

...and Kosovo...

PS HAS BEEN
THERE WITH YOU!

Issue 583

PS

June
2001

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-583

Approved for
Public Release;
Distribution is
Unlimited

50

**Years of Preventive Maintenance
1951-2001**



UNITED STATES ARMY
THE CHIEF OF STAFF

January 5, 2001



To the Staff of PS Magazine

On behalf of The Army staff and "soldiers on point", congratulations to the staff of PS Magazine for five decades of promoting the critical job of maintaining Army equipment.

Through 50 years and 583 issues, PS has helped carry the preventive maintenance banner by publishing information to help commanders keep their equipment combat ready. The innovative format and useful information has assisted several generations of soldiers and maintenance personnel to better understand the equipment of the world's finest Army.

In The Army today, there is no more important question than the one PS asks every month: "Would you stake your life—right now—on the condition of your equipment?" PS has been helping soldiers answer that question for many years and we hope you will continue to provide the answers for many years to come.

Congratulations on a job well done!

Eric K. Shinseki
General, United States Army



UNITED STATES ARMY
THE SERGEANT MAJOR
WASHINGTON, D.C. 20310-0200

January 19, 2001



To the Staff of PS Magazine

Congratulations, MSG Half-Mast and PS staff, on achieving your 50-year milestone. Your achievement shows the preventive maintenance message has endured the test of time and serves as a starting point for meeting the maintenance challenges of the 21st Century.

As the Sergeant Major of the Army and a tanker by trade, the phrase, "the more things change, the more they remain the same" has great meaning to me. The tanks that rolled across Korea didn't have the speed or firepower of today's Abrams tank. Yet, they got the job done for the same reason—daily preventive maintenance. PS Magazine gets that message across in plain language and humor of the people who are responsible for keeping the equipment running. In turn, our wrench turners, maintenance NCOs, and support folks are on the cutting edge.

PS Magazine has been with me throughout my career. I have used it to identify parts, review a maintenance procedure, as a training aid, and as a supplement to my equipment technical manuals. I believe PS should be mandatory reading for all Soldiers and the question PS poses every month, "Would you stake your life—right now—on the condition of your equipment?" should challenge Soldiers daily.

I salute you on achieving 50 years of maintenance and support excellence.

Jack L. Tilley
12th Sergeant Major of the Army



DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-0001



AMCCG

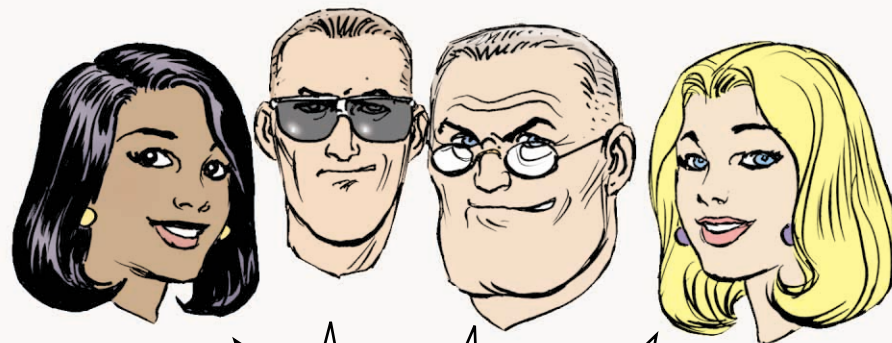
5 January 2001

MEMORANDUM FOR The Staff of The Preventive Maintenance Monthly

SUBJECT: PS Magazine 50th Anniversary

1. Congratulations on your upcoming 50th anniversary. Three generations of men and women in uniform have learned from and prospered by the preventive maintenance and supply information provided by PS Magazine.
2. Equipment has changed greatly in the past 50 years, but the need to properly maintain it has not varied. PS Magazine has proudly promoted one theme over the entire half-century: "We have the world's best equipment, take care of it."
3. In my career, I've been able to view PS as a user of the information within its pages and then as a producer of that information. As a unit commander, I always valued PS as a maintenance tool. Later, as Commander of the USAMC Materiel Readiness Support Activity, where PS was produced, I was proud to call PS "my magazine." Now, as AMC Commander, I still call PS "my magazine." I'm still very proud of it and its value to the Army.
4. Best wishes for many more years of valuable service to the field soldier.
5. AMC-- Army Readiness Command... Supporting Every Soldier Every Day.

John G. Coburn
General, USA
Commanding



THANKS FOR THE KIND
WORDS AND GREAT SUPPORT!

PS 583

JUN 01

About This Issue

You may have already noticed that this issue of PS is special. For one thing, the whole magazine is printed in four colors, not just the covers and the center section.

The contributions by Generals Shinseki and Coburn and Sergeant Major of the Army Tilley are another special feature.

This issue also has some really unusual-looking pages, like the two you see here. The reason they look strange is because they were first printed in PS 20 or 30 or more years ago. Word for word, including all illustrations, they're the same. Yet their message is just as relevant today as it was back then.

Why? Well, one reason is because soldiers are still using some of the same kinds of equipment that were used in Vietnam, even Korea. More importantly, the need for preventive maintenance on that equipment has not changed.

It still needs regular checkups to guard against the insidious damage of corrosion. It still needs lube at regular intervals. Its filters still need periodic cleaning or changing.

So, while your tools, equipment, gear and weapons have evolved over the last 50 years to meet the ever-changing nature of warfare, the need for preventive maintenance has not changed.

And it never will.

PM[®] IS FOR EVERYTHING

...BY EVERYBODY



When it comes to *Preventive Maintenance, Everything and Everybody get in the act.

Everything—meaning every piece of clothing and equipment the Army issues you or that you use . . . gets the “plush-carpet” treatment by you when it comes to care, cleaning and right kind of operation.

It means **everything** . . . not just rifles and trucks. It means your tent, shovel, pack, radio, stove, jacket, recoilless rifle, mortar—everything.

And, Everybody . . . means just that—**everybody**.

Private—yes. Specialist—yup. Corporal—right. Sergeant—him, too. Yes, Sir, right on through lieutenants, captains, majors, colonels and generals. **PM** is everybody's job.

Which, when boiled down to a nub, means that when you (and every man in uniform) have been issued equipment to wear, use or operate, you've got the biggest job in the world—that of giving it the right kind of care and operation.

That's **Preventive Maintenance**—your insurance to win in battle.

PS

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PS MAGAZINE: 50 YEARS OF PM



Sgt. "Half-Mast"
Question Dept.



CORPORAL



Half-Mast and Connie,
from an early issue
of ARMY MOTORS

This issue of PS marks our 50th anniversary as the Army's preventive maintenance monthly magazine. PS hit the field in June 1951 to help our troops take better care of their equipment. Today in June 2001, PS still gives soldiers the best maintenance information available.

The concept of PS actually began in World War II with *Army Motors*, the Army's first maintenance magazine. It was in *Army Motors* that PS' two most prominent characters, MSG Half-Mast and Connie Rodd, first appeared.

As the Korean War heated up, the Army needed a way to get maintenance information to soldiers quickly and in an easily-understood form. So the Army turned to Will Eisner, an artist famous for his work on the *Spirit* comic strip—and one of the artists for *Army Motors*—to design PS.

Half-Mast from PS 67
and Connie from PS 53



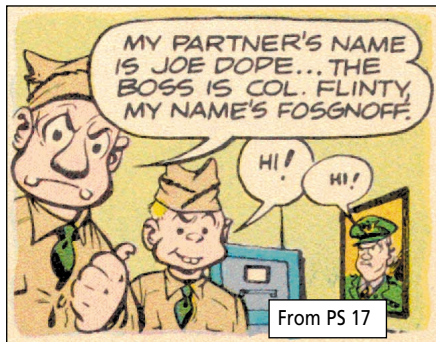
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PS MORE

PS MAGAZINE: 50 YEARS OF PM

Eisner's creation was very similar to the one you're reading now. As a "post-script" to official Army publications, PS still tries to catch soldiers' attention with a mixture of comic book characters, vivid graphics and color, gags, talking equipment, and informal writing. It still sends its message as clearly as possible, emphasizing pictures over words.



From PS 17

As many retired Army maintainers can tell you, Connie and Bonnie were presented as pinups for many years. Their scanty outfits were designed to lure male readers to the maintenance stories.

The Army decided in the 1950s that it didn't want soldiers portrayed as incompetent, so Fosgnoff and Dope were both gone by 1957. After complaints of sexism from inside and outside the Army in the early 1970s, Connie and Bonnie were transformed from pinups to modestly dressed, intelligent maintenance experts.

Other characters who have come and gone over the years include Sergeant Bull Dozer (who specialized in construction equipment) and SFC Macon Sparks (who was the PS commo expert).

PS 583

But, as our society and our Army have changed over these 50 years, so has PS.

In the early days, Half-Mast and Connie were assisted by Privates Fosgnoff and Joe Dope, two Beetle Bailey-type soldiers who were constantly screwing up. As the number of African-Americans in the Army increased, an African-American woman, Bonnie, was added to the PS staff in 1970.



Connie, Bonnie and Percy the skunk, from PS 264

Macon Sparks, from PS 375

PS MAGAZINE: 50 YEARS OF PM

PS strives for complete accuracy so that soldiers know they can depend on the magazine's info. Most of the material in PS comes from writers' frequent visits to field units, where they talk with soldiers who actually operate and work on the equipment. All articles are reviewed twice by the AMC commodity command responsible for the equipment—once when written and again when words and pictures have been combined. The whole review process normally takes about 4 months.

From the beginning, PS has been written and edited by Army civilians and its art drawn by contractors. Norman Colton was the first editor from 1951-1953, followed for a short while by Jacob Hay.

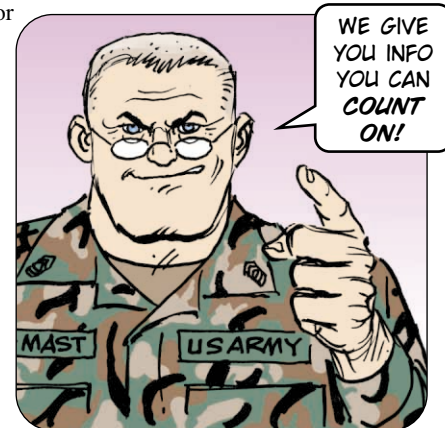
James Kidd served as PS' editor for almost 30 years from 1954-82 and trained the editors who followed him: Donald Hubbard, James Boblenz, and now Jerome Hill.

Will Eisner drew most of the magazine's art for its first 20 years and then one of his assistants, Murphy Anderson (who also worked on the *Superman*, *Batman*, and *Flash* comic books), did it for the next 10. Others who labored as PS' artists include Chuck Kramer, Alfredo Alcala, Dan Speigle, Steve High, Jeff Jonas, Diane Backes, Augie Scotto, Scott Madsen, and Vic Scarpelli. PS' newest artist, Joe Kubert, drew the *Sergeant Rock* comic book series for many years.

The PS home office was initially located at Aberdeen Proving Ground, MD. In 1955, it was moved to Raritan Arsenal, NJ, with subsequent moves to Ft Knox, KY, in 1962, Lexington, KY, in 1973 and to its current home at Redstone Arsenal, AL, in 1993.

What does the future hold for PS? The only sure thing is that as long as PS exists it will continue to provide soldiers the best, most up-to-date maintenance information available.

PS 583



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IT MAKES V-BELT CARE ALMOST NICE

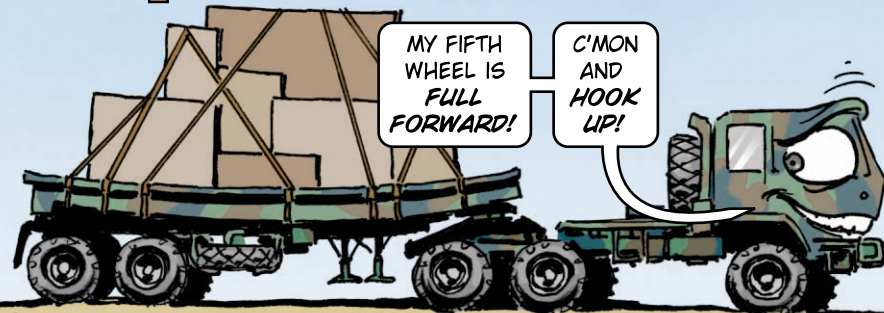
Here's a real handy chart that makes it a cinch to spot the wear and tear on the V-belts in your rig. Whether it's a drive belt on a stationary compressor or a fan belt on a 2½-ton truck, a few minutes spent checking it now and then will be your guarantee that it'll do the job.

This guide will clue you to any trouble and tell you what to do about it.

CHECK 'EM OUT YOURSELF...BY EYE 'N EAR

V-BELT PERFORMANCE CHART		
LOOK FOR—	IT'S CAUSED BY—	FIX IT BY—
V-Belt Slipping 	Not Enough Tension Overloaded Drive Pulleys Worn Oily, Greasy Belt	Increasing Tension Using Right Belt Having Pulleys Replaced Wiping It Clean
Cracked Belt 	Belt Slipping Too Much Heat	Increasing Tension Proper Ventilation, Checking Belt Guards
Belt Turning In Groove 	Broken Cords In Belt Overloaded Drive	Using New Belt Using Right Belt
Rapid Belt Wear 	Belt Put On Incorrectly Tension Too Tight Mismatch Belts (In Set) Overloaded Drive	Using New Belt Right Adjusting Tension Replacing With Matched Set Using Right Belt
Shiny Pulley-Groove Bottom 	Belt Bottoms In Groove, Worn Pulley	Installing New Belt, or Having Pulley Replaced
Worn Pulley 	Worn Pulley Sidewalls	Having Pulley Replaced
Pulley Wobble 	Bent Shaft, Worn Bushing, Improper Installation	Having Defects Corrected, Pulley Re-Installed
Damaged Pulley 	Chipped, Bent Pulley	Having Pulley Replaced
Ticking Noise 	Belt Rubbing Guard	Checking Belt-Guard Clearance
V-Belt Squeal 	Overloaded Belt Not Enough Tension	Using Right Belt Increasing Tension

Keep Fifth Wheel Full Forward

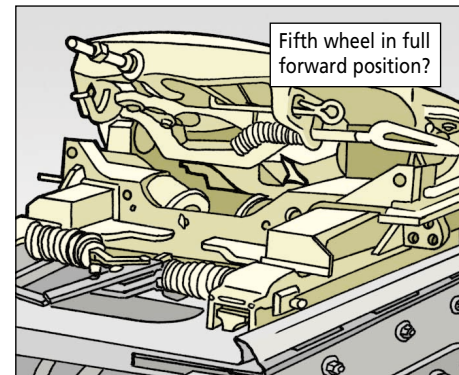


Think you're ready to hook up your M1088 or M1088A1 FMTV tractor to a trailer? Maybe not, if you haven't checked the fifth wheel's position.

The fifth wheel must be in the full-forward—or front—position in order to hook up to a trailer or pull one. Otherwise, you're likely to bend the frame.

Use the rear position only when the tractor-trailer rig is being loaded onto a ship.

ADD THIS CAUTION TO PARA 2-39(A) OF TM 9-2320-366-10-1 UNTIL IT IS UPDATED...



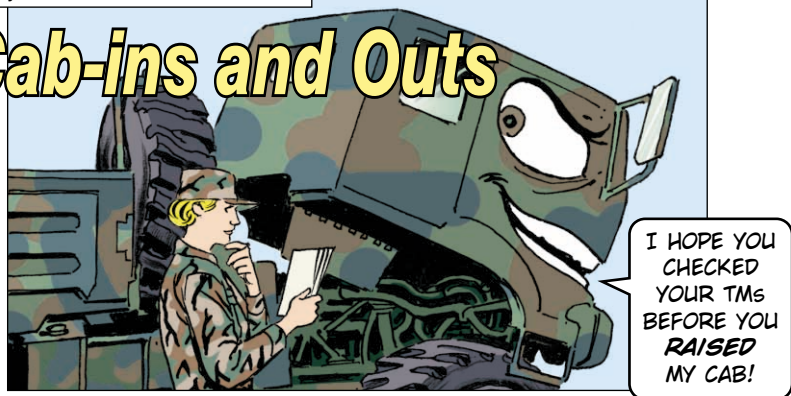
Sliding fifth wheel must be in the front position before coupling M1088/M1088A1 tractor to any trailer. Failure to comply may result in damage to equipment.

Additionally, add this CAUTION about tractor-trailer operation in cross-country conditions:

Do not exceed the 22-percent grade limitation while operating the M1088/M1088A1 tractor. Failure to comply may result in damage to equipment.

In other words, don't drive over hills that will force the fifth wheel to bend or tilt in order to stay hooked to the trailer.

Cab-ins and Outs

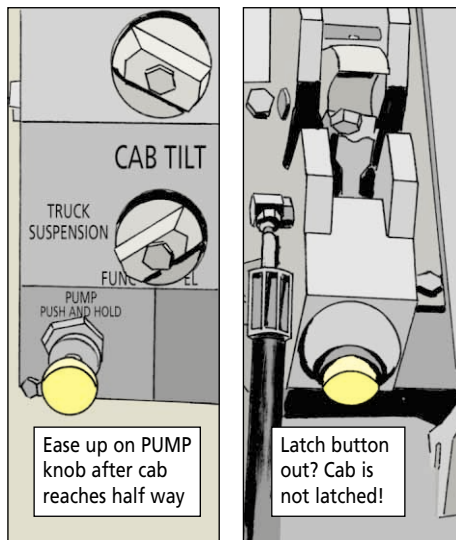
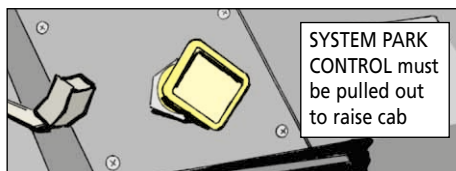


Here are some lessons learned the hard way that are good to remember when you're raising and lowering the cab on your FMTV:

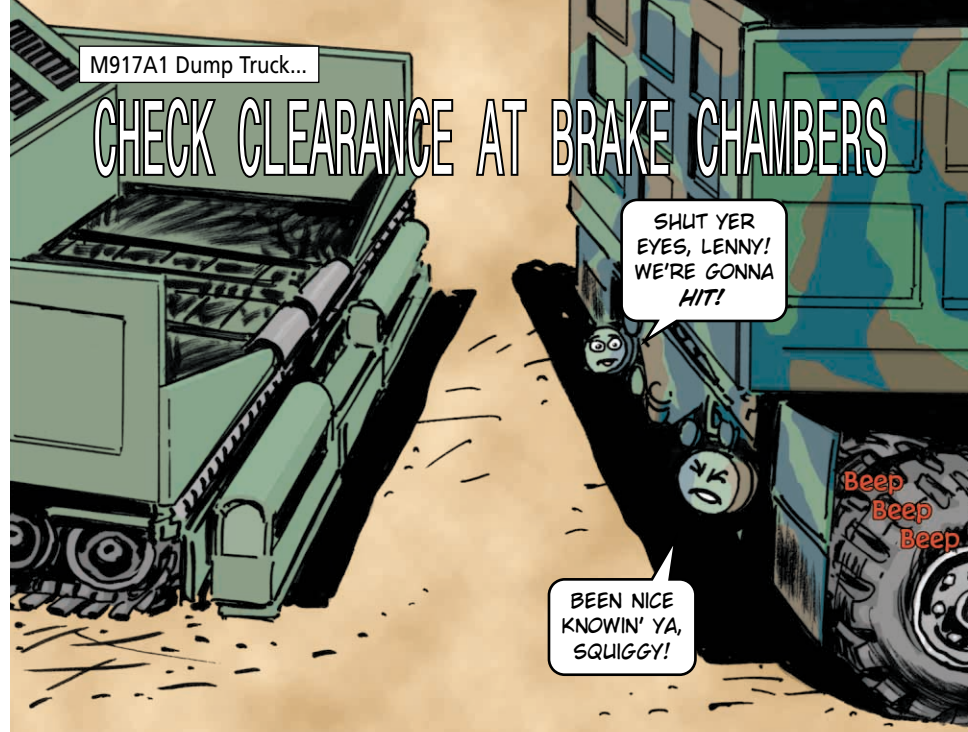
❑ The cab will not raise unless the parking brake is applied. There's an interlock switch that prevents it. If the cab won't raise after you've applied the brake, troubleshoot with the -10 TM.

❑ When raising the cab, ease off the hydraulic system PUMP knob when the cab passes the halfway point toward full open. Let the cab's weight take it down as far as it will go. That way, there's no added stress on the hydraulic cylinders. The cab will stay up on its own.

❑ Make sure the cab latch is locked before driving the truck after the cab is lowered. If it isn't, you and the cab could be thrown forward in an accident. Hold the PUMP knob until you can see that the button on the right side of the latch is **in** (flush with the latch body). If the button is **out**, the cab is **not locked**.



CHECK CLEARANCE AT BRAKE CHAMBERS



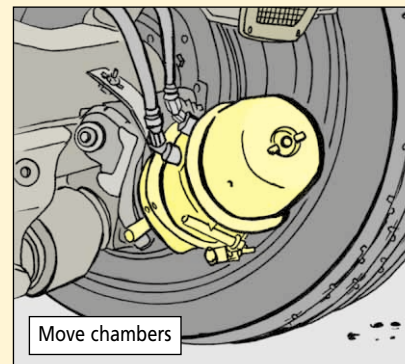
If you're going to use your M917A1 dump truck in a paving operation with the 780T bituminous paving machine, you need to reposition both the right and left rear-axle brake chambers.

The chambers are located so low on the truck axle that the rollers of the paving machine make contact with them during paving. The resulting damage can leave you brakeless.

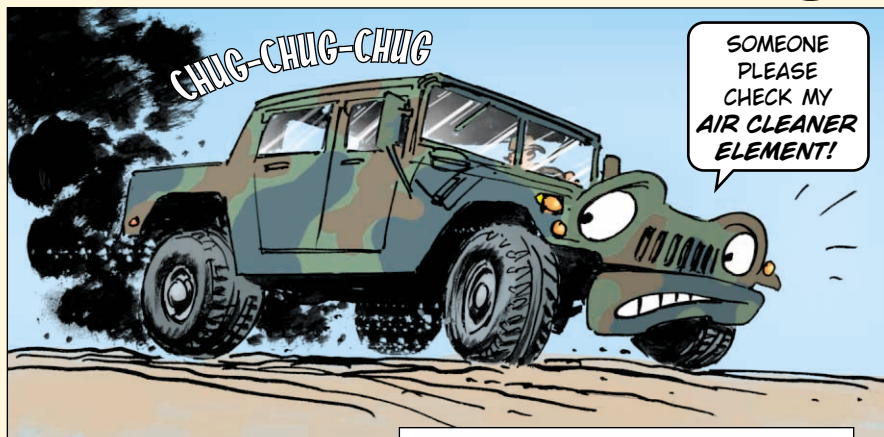
To move the chambers, eyeball the information found in TB 43-0001-62-5 (Apr 00) on Pages 3-4 through 3-10.

If you don't have a copy of the TB, ask your TACOM logistics assistance representative for help. Or you can ask ol' Half-Mast to send you a copy of the pages. He'll need your regular mailing address.

You can also access the information on the M915 Family of Vehicles web page at <http://www-acala1.ria.army.mil/DLCM/dsa/LCA/AF/M915>.



Air Gauge

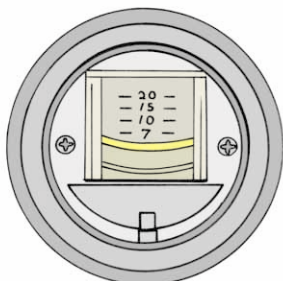


Dear Editor,

A HMMWV driver gets a view of the condition of the truck's air cleaner element every time he eyeballs the air restriction indicator while the engine is running.

If the indicator never moves, though, is it working right, or at all?

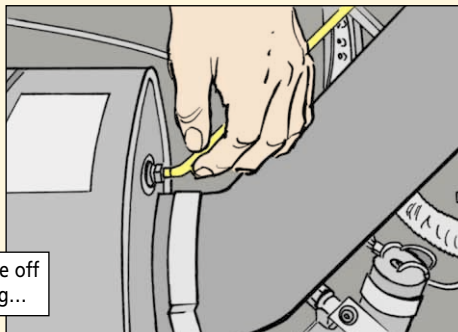
Does this gauge move?



Here's a quick function check a mechanic can perform by using the oil sample vampire pump:

1. Pull the restriction gauge air line off the air filter housing.
2. Place the air line in the side of the pump that normally holds the sample bottle, using the four fingers of your hand to help seal the pump opening. Put your thumb over the other pump opening.

Pull line off housing...

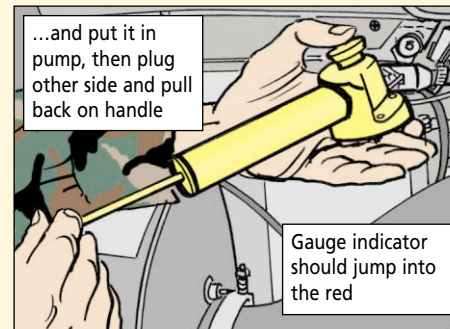


Function Check

3. Pull back on the pump handle while someone else watches the restriction gauge in the cab. If the gauge and hose are working right, the gauge indicator will jump into the red range.

If the indicator doesn't jump into the red, there's a problem with the air hose or the indicator. Check the hose first for holes or poor connections. If the hose is bad, replace it. If the hose is good, replace the gauge.

CW2 James Shoebridge
709th MP Bn
Camp Bondsteel



DUMP VALVE SERVICING

Has your HMMWV done time in sand, mud or water lately? Probably so, since the truck can go just about anywhere you want to take it.

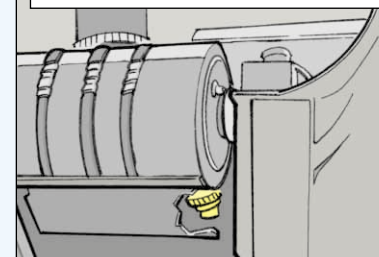
If you've been there and done that, did you also service the air cleaner dump valve afterward?

Seems that not a lot of folks even know where the dump valve is located, much less service it when needed. They need to look at Para 3-16, Page 3-21, of TM 9-2320-280-10.

All you have to do is squeeze the dump valve to clear any sand, mud or water from the air cleaner assembly. Left in there, the stuff can clog up the filter element and starve the engine of clean air.

So where is the dump valve? It's under the air cleaner assembly, behind a baffle that protects the air cleaner from road debris. Reach a hand under there and give it a squeeze.

Squeeze dump valve to release dirt, mud, or water from air cleaner assembly



MAINTENANCE VS

DESERT

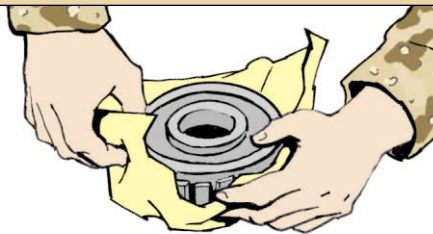


Doing maintenance in the desert is more than just a dirty job: Anything covered with grease or oil attracts dust and sand like a magnet.

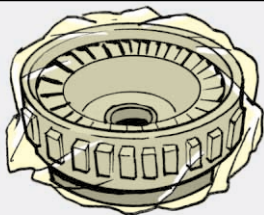
Sand and dust combine with grease and oil to make a gritty combo that works like scouring powder on metal surfaces and rubber seals.

But you can't avoid maintenance in the desert, just like you can't shut out sand and dust completely. Here's what you can do:

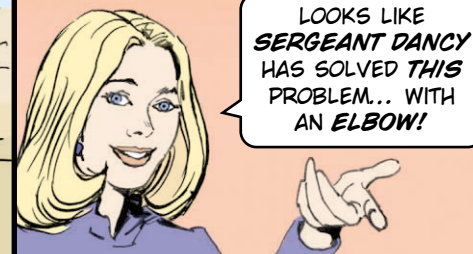
→ Keep sand and dust off repair and replacement parts while you're making repairs by wrapping greased parts with waxed paper or newspaper.



→ Use plastic wrap to keep dust and sand out of open components. NSN 8135-00-043-5331 gets you an 11½-in by 100-ft roll of this self-clinging plastic film.



Prevent Air Hose Damage



Dear Editor,

The brake system connections on M870A1 trailers are in such an awkward position that when we hook up our M916A1 tractor's air hoses, the hoses are in a tight bend. Over time, the bending fatigues the hoses, leading to leaks.

Since air hoses are not cheap, I solved the bending problem.

I installed a 45° street elbow, NSN 4730-00-595-0143, between the hose and connector on the tractor's air hoses. Then I put antiseize tape, NSN 8030-00-889-3535, on the threads to seal the connection.

The air hoses can then be hooked up to the trailer connector at an angle that won't create leaks.

SSG Steve Dancy
N. Wilkesboro, NC



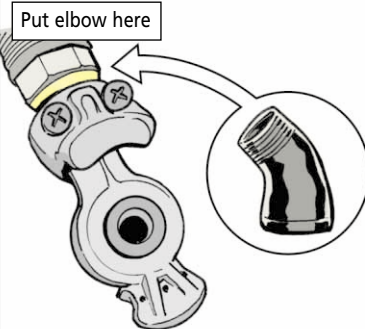
→ Use plastic bags to hold bearings and small parts like nuts and bolts that might get lost or dirty before you need them again.

HERE ARE SOME STANDARD-SIZE SELF-SEALING PLASTIC BAGS...



Size (inches)	NSN 8105-00-837-
6 x 6	7754
8 x 8	7755
11 x 10 ½	7756
12 x 12	7757

You should also tag the bags to make sure everything goes back on exactly where it came off.



BREAK 'EM IN, NOT UP



Pamper those pads, pal, and your tracks will carry you a lot farther—



and come up looking unshredded when inspection time rolls around.



New tracks should be broken in by the numbers when you first put 'em on your tank—because when coming from storage, pads are likely to be brittle.

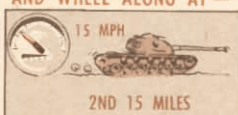


Rubber loses its bounce when it's been stored for long.



But, with a proper break-in period, it'll get it back like a runner catching his second wind. Soon after you put the new tracks on, head for a smooth secondary road, or a paved one...

AND WHEEL ALONG AT—



That should put the bounce back into 'em. Avoid driving faster than 20 MPH if the temperature is higher than 85° F. The pads'll heat up to a point where they'll start cracking, chunking or blowing out.

Pivoting on rough roads or rocky ground cuts pads, and may squeeze 'em loose. Try to avoid it.

If operating on crowned- or hard-surfaced roads, the tracks' outside edges will wear down faster than the outside. When this happens trade tracks from one side to the other to even up wear. It's good for the end connectors and center guides, too.



Keep Commander's Hatch Clean

UH, OH!
THE SEAL'S
DAMAGED.
BETTER GET
A NEW ONE!

MAYBE YOU
COULD TAKE A
LITTLE **BETTER**
CARE OF THE
NEXT ONE!



The -10-1 TMs remind you to eyeball the commander's hatch seal after every operation.

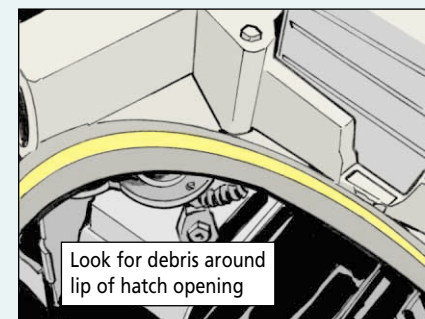
You know to look for tears, rips, cuts and separation. You even know to check for places where the seal doesn't spring back after compression. And of course you know to have a damaged seal replaced.

But do you know how to keep all those problems from happening in the first place?

Most seal damage comes from dirt, sand, rocks and other debris that collects on the lip around the hatch opening. The seal wears out when it's constantly pressed down against that stuff.



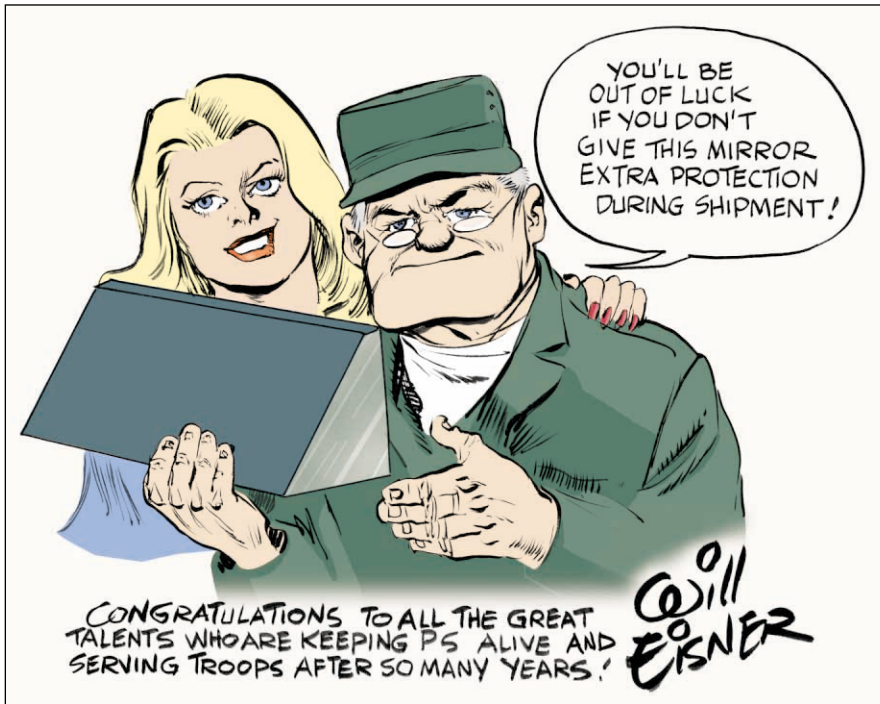
Check seal
for damage



Look for debris around
lip of hatch opening

Check the hatch opening often and sweep away any debris that collects there. Then wipe the lip clean with a damp cloth to get rid of smaller particles.

Down On Your Luck?



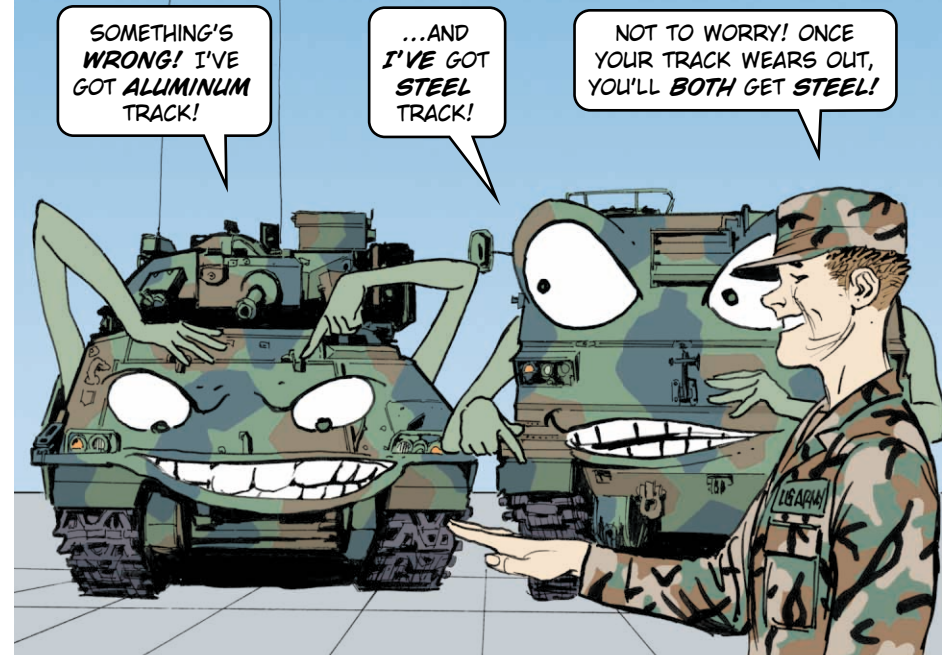
While it won't cause you 7 years of bad luck, damaging the head mirror on your tank's dual axis head assembly (DAHA), NSN 1240-01-362-1914, can cost your unit some extra bucks.

The problem comes when a damaged DAHA is sent in for repairs. Even when you send the assembly in its shipping container, NSN 8145-01-476-4131, loose pieces of metal, dust and loose desiccant can scratch the head mirror. The DAHA arrives even more damaged than when it was shipped.

Stop that extra damage by first wrapping the head mirror in lens paper, NSN 6640-00-436-5000, followed by a layer of cardboard. Hold the coverings in place with masking tape.

Add a small bag of desiccant, NSN 6850-00-264-6571, to the shipping container to protect against moisture and the DAHA should arrive the same way it was shipped.

NO MORE CHOICE FOR TRACK



For years now, official word had it that steel-backed track was best for Bradleys because of its durability and aluminum-backed track was best for MLRS carriers because of airlift weight restrictions. Unfortunately, the official word never seemed to jibe with what units had to do to keep their vehicles ready.

As a result, the Bradley and MLRS fleets contain a hodgepodge of steel- and aluminum-backed track.

Finally, a decision has been made by TACOM, PM Bradley and PM MLRS to go strictly with steel-backed track for **both** vehicles. Aluminum-backed track is still in the supply system, but when current supplies are gone, there'll be no more.

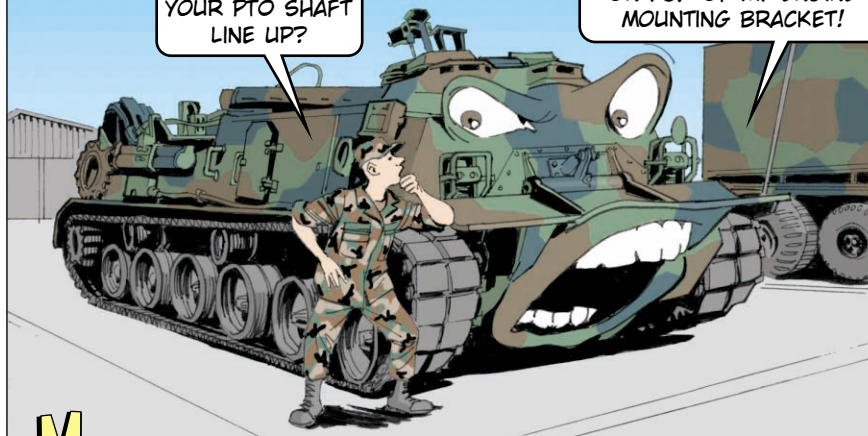
When your aluminum-backed track wears out, replace it with steel-backed track. NSN 2530-01-440-7615 brings the steel-backed Bigfoot pad kit. Get the steel-backed Bigfoot shoe and pad only with NSN 2530-01-442-9686.

So what about those airlift weight restrictions for the MLRS? They still apply, so make sure only **aluminum** roadwheels, NSN 2530-00-801-6702, are used on those vehicles.

CLEAN THE CLAW

I DON'T GET IT! WHY WON'T YOUR PTO SHAFT LINE UP?

MAYBE IT'S BECAUSE YOU PUT MY **POWERPACK** ON TOP OF MY ENGINE MOUNTING BRACKET!



Mechanics, when you pull the powerpack in your M88A1 recovery vehicle for scheduled services, pay special attention to the engine mounting bracket, NSN 5340-00-752-7607.

The bracket is a claw-like device that holds the bottom of the powerpack and attaches it to the hull.

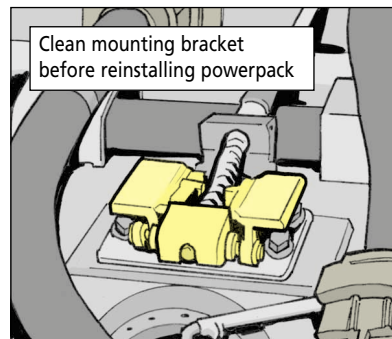
Problem is, dirt and oil from the bottom of the engine compartment collects on the mount and keeps it from opening or closing completely.

You don't want that to happen when you try to reinstall the powerpack. The powerpack won't lock down because it's sitting on top of a mounting bracket that's still partially closed, and the PTO shaft won't line up. That means the transmission won't engage and you're going nowhere fast.

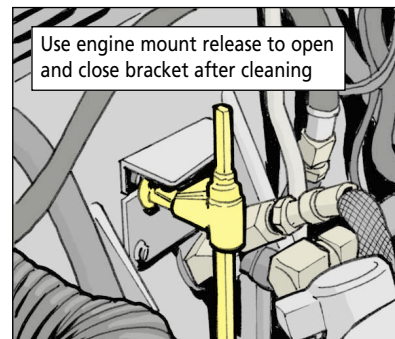
And don't even think about trying to open the mounting bracket with the powerpack in place. That just breaks the \$400 bracket. Plus, you'll still have to pull the powerpack again to replace the bracket.

So save yourself a lot of time, money and aggravation the next time you pull the powerpack. Clean the engine mounting bracket thoroughly. Use a nylon brush to clean off heavy dirt and oil. Then use the engine mount release to make sure the bracket opens and closes completely before reinstalling the powerpack.

Clean mounting bracket before reinstalling powerpack



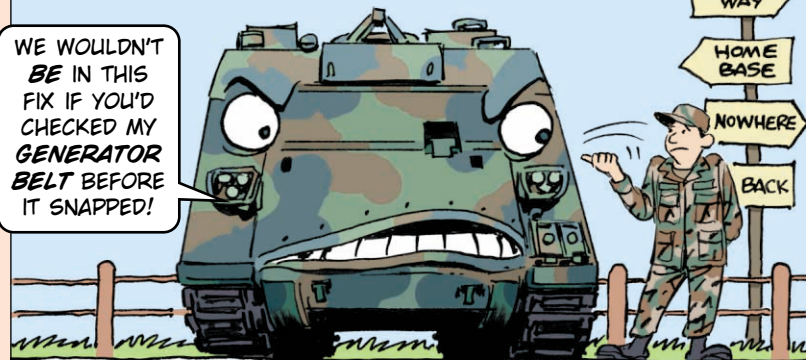
Use engine mount release to open and close bracket after cleaning



M113A3 FOV ...

Check for Worn Belt

WE WOULDN'T **BE** IN THIS FIX IF YOU'D CHECKED MY **GENERATOR BELT** BEFORE IT SNAPPED!



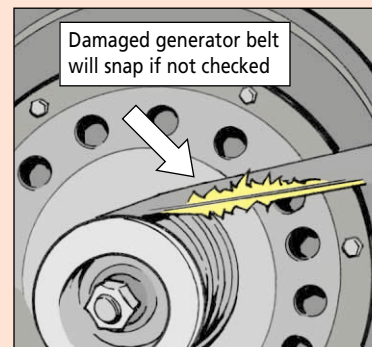
Crewmen, when it's time to check the engine belts on your M113A3 carrier, don't forget the one for the generator.

Sure, removing the bottom access panel is a hassle. But if you don't remove it, you can't get a good look at the generator belt.

A worn belt will snap during operation and you'll lose power as soon as the batteries run down.

Take a close look at the pulleys, too. Nicked or bent pulleys will make a good belt go bad quickly.

Damaged generator belt will snap if not checked



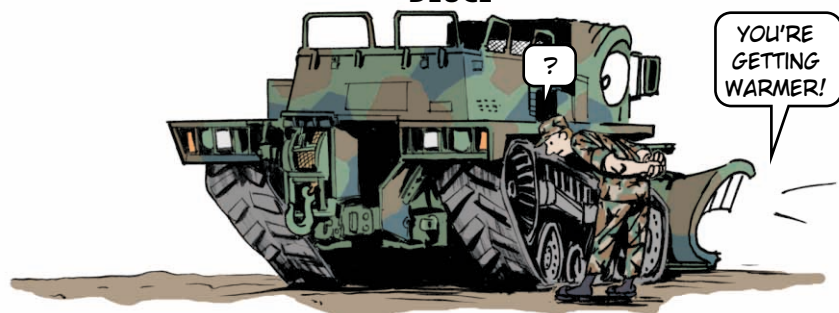
CCE/MHE Equipment...



Snubbed

Operators, pumping grease into the fittings on your construction and material-handling equipment isn't a problem. The problem is finding all fittings.

DEUCE



Winch and pintle fittings on your deployable universal combat earth-mover get overlooked because they're in the back of the vehicle. Out of sight, out of mind.

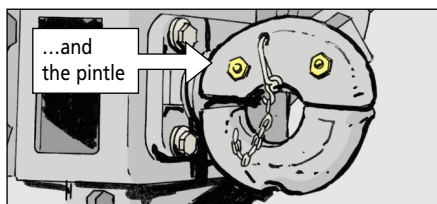
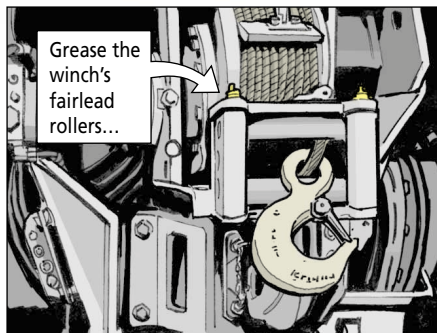
But without lube, the winch's fairlead rollers can seize up. That puts extra wear and tear on the winch cable when it rides over the rollers.

After you've greased the fairlead rollers, grease the pintle.

If you forget to lube the pintle every 250 hours or 3 months like TM 5-2430-200-10 says, rust freezes it into position.

If the pintle can't turn, a twisting or tipping trailer can ruin a lunette quick-like.

PS 583

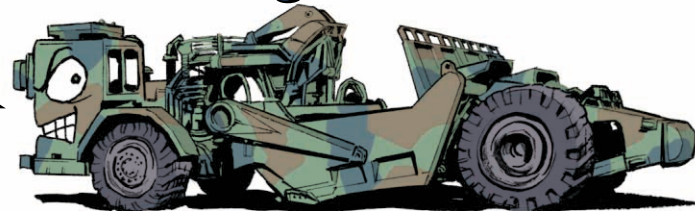


22

JUN 01

Grease Fittings

IF I DON'T GET LUBED, I DON'T WORK!

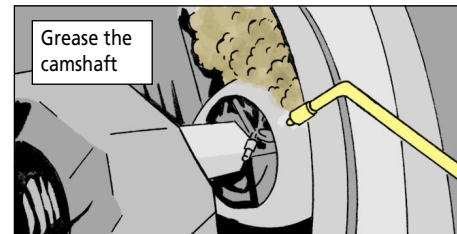


621B Scaper

Eight grease fittings on the 621B scaper often get overlooked because they're located behind the wheels. The fittings lube the brake camshafts.

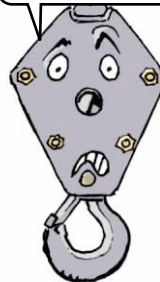
Without lube, the camshafts will bind—usually with the brakes on. Then the brakes drag, the linings glaze, and you can have a tire fire on your hands.

So keep brake camshafts lubed during scheduled services. Two fittings are behind each wheel.



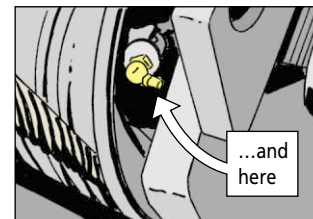
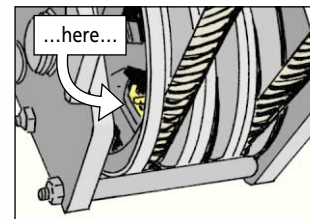
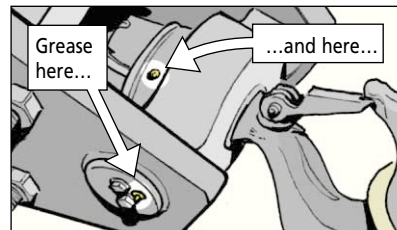
22-Ton Crane

FOUR GREASE FITTINGS ON THE 22-TON CRANE GET OVERLOOKED BECAUSE THEY'RE ON ME—THE HOOK BLOCK.



Without lube, the block's sheaves, trunnion and thrust bearings can seize up. That causes excessive wear and tear on the crane hoist cables and hook block sheaves.

For smooth crane operation, lube the hook block with GAA monthly or every 100 hours like it says on Page 1-4-9 of TM 5-3810-307-24-1-1.



MISSING A GROMMET?

GLAD I CHECKED THOSE GROMMETS! BOTH WERE MISSING!

ME TOO! CUT BATTERY CABLES WOULD HAVE BEEN A SHOW-STOPPER!

It's hard to believe that one missing grommet could stop a big machine like your grader.

Believe it! Take the grommets that protect the 130G's battery cables as they pass through the engine's left and right access covers.

The elements and vehicle vibration will rust and loosen the grommets. Once the grommets are gone, the edges of the access cover can cut the cables' rubber insulation.

That can ground the battery and shut down the vehicle. It could also burn or shock anyone touching the vehicle.

So eyeball the grommets to see if they're loose, missing or dry rotted. They should fit snugly in the holes.

If they need replacing, use NSN 5325-01-176-8163. It's Item 28 in Fig 218 of TM 5-3805-261-24P.

CONGRATS FROM SCOTT MADSEN 1988-2000

SOMETIMES, PM IS JUST KEEPING AN EYE OUT FOR POTENTIAL TROUBLE.

Replace missing grommets with NSN 5325-01-176-8163

50 Years of PS

IT HAS BEEN 50 YEARS SINCE **PS** MAGAZINE WAS FIRST PUBLISHED. THERE HAVE BEEN LOTS OF **CHANGES** SINCE THEN. NEW EQUIPMENT HAS BEEN ADDED EVERY YEAR TO MAKE SURE YOUR ARMY HAS "**THE WORLD'S BEST EQUIPMENT.**"

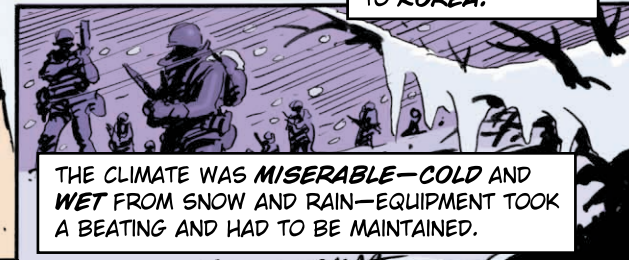
BUT **ONE** THING HASN'T CHANGED. THAT'S THE DEDICATION OF **PS** TO KEEP "**THE WORLD'S BEST EQUIPMENT,**" UP AND RUNNING. **PREVENTIVE MAINTENANCE** IS AN OLD IDEA THAT **NEVER** AGES.

1951

THIS IS THE FIRST ISSUE OF **PS**. **WILL EISNER**, A RENOWNED CARTOONIST, USED CARTOONS TO SELL PREVENTIVE MAINTENANCE POINTS. THE SOLDIER'S LOVED IT- AND STILL DO!



IT WAS 1951, ONLY SIX YEARS AFTER **WORLD WAR TWO**, WHEN VETERANS OF THE '**BIG ONE**' AND NEW RECRUITS FOUND THEMSELVES ON THEIR WAY TO **KOREA**.



THE CLIMATE WAS **MISERABLE—COLD AND WET** FROM SNOW AND RAIN—EQUIPMENT TOOK A BEATING AND HAD TO BE MAINTAINED.

YEP, **PS** HELPED THEM IN KOREA TO GET THAT TANK ROLLING AGAIN.

WE HAVE A PROBLEM WITH THE M-46 JUNCTION BOX.

I READ ABOUT THAT IN A NEW MAGAZINE CALLED **PS**. IT SAYS THE PROBLEM IS...

IN 1961, THE OLD JEEP WAS STILL OUR STANDARD FOR TRANSPORTATION...

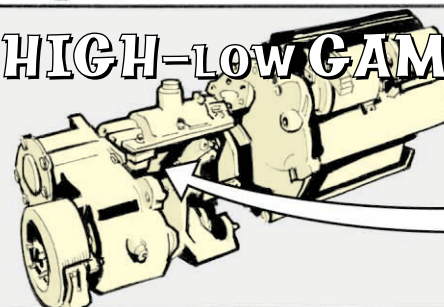
1961



IT WAS A RUGGED WORKHORSE, BUT IT STILL NEEDED PM.



HIGH-LOW GAME

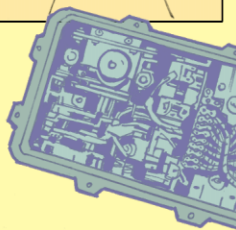
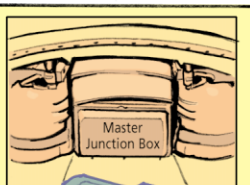


MAKE LEVEL CHECK ONLY AT TRANSMISSION FILLER PLUG

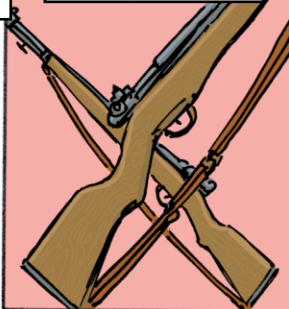


IT HELPED SHOW THEM HOW TO KEEP THEIR SOCKS DRY AND THEIR BOOTS OILED TO KEEP AWAY FROSTBITE.

IT HELPED TO MAINTAIN THEIR BEST FRIEND, THE **M-1 RIFLE**.



From **PS** #1, 1951

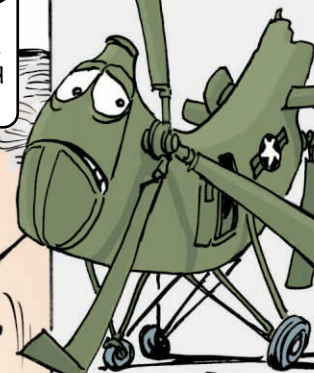


HAVE YOU DONE **PM** ON THAT RIFLE, SOLDIER?

YES, SIR. I USED MY **TM** AND THAT NEW MAGAZINE, **PS**, TO GET SOME **EXTRA** TIPS.

PS WAS A CHILD IN THE '50s AND WOULD GROW TO MATURITY IN THE TURBULENT '60s.

LOOK BEFORE YOU INSTALL



IN THE EARLY '60s, ALAN SHEPARD BECAME THE FIRST AMERICAN IN SPACE AND **PS** DEALT WITH PROBLEMS LIKE:

DUMP the RUST



THEN, IN 1962, **JOHN GLENN** WAS THE FIRST U.S. ASTRONAUT TO ORBIT THE EARTH... **WILT CHAMBERLAIN** SCORED 100 POINTS IN ONE BASKETBALL GAME."

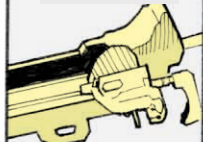
IN 1963, PRESIDENT **JOHN F. KENNEDY** WAS ASSASSINATED...

LYNDON JOHNSON BECAME PRESIDENT AND WON RE-ELECTION IN 1964. BY 1966, THINGS WERE GETTING HOT IN VIETNAM.

PS WAS THERE PUTTING OUT THE PM WORD ON THINGS LIKE GRENADE LAUNCHERS...

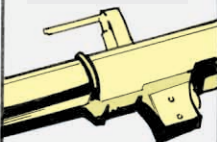
CLEANING AND LUBING

ON INSIDE PARTS, USE:



BORE CLEANER (CR) FSN 6850-224-6656 (2 OZ CAN)

ON OUTSIDE PARTS USE:



DRY CLEANING SOLVENT (SD) FSN 6850-281-1985 (1 GAL CAN)

TWO YEARS LATER, IN 1968, **ROBERT KENNEDY** AND **MARTIN LUTHER KING, JR.** WERE SLAIN.



When field-stripping, remember, always remove the sear lever before you remove the trigger group

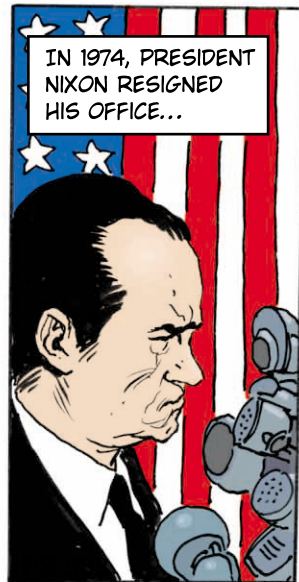
From PS #174, June 1967

When assembling, remember, the sear lever must be assembled to the sear before you assemble the firing pin... AND... the sear must be installed before you install the trigger group.



THREE YEARS LATER **PS** WAS STILL THERE, NESTLED IN THE POCKETS OF FATIGUES, AND SHOWING THE WAY OF **PM** THAT WOULD PREVENT THE CORROSIVE FORCES OF HEAT AND HUMIDITY.

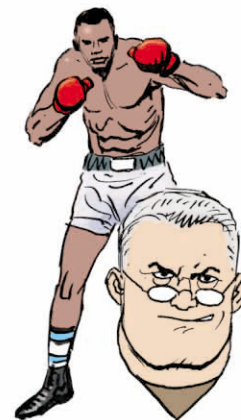
IN 1974, PRESIDENT **NIXON** RESIGNED HIS OFFICE...

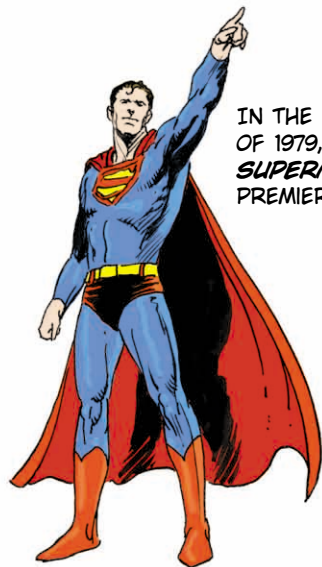


AND THE MOVIE **JAWS** TOOK A BIG BITE OUT OF AUDIENCES' WALLETS.



IN 1978, **ALI** DEFEATED **SPINKS** AND WON THE HEAVYWEIGHT TITLE FOR A THIRD TIME.





IN THE SUMMER OF 1979, THE FIRST SUPERMAN MOVIE PREMIERED...



...BUT LATER THAT YEAR, REAL-LIFE HEROES FORGED A PEACE ACCORD AT CAMP DAVID

ROLLING WITH YOU

From PS #223, June 1971

SEE—Watch those gauges and instruments to be sure they stay in operating range

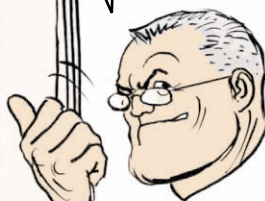
LISTEN—A bang, clank, snap, screech or any unusual sound could mean trouble. Stop and see if anything's wrong

THINK—Know our operating limits. Limit the size bite you can take, the speed you go and the jobs you can do

ACT—Look after on-the-spot PM jobs. Correct any fault that can't wait until quitting time

THESE FOUR THINGS WILL *STILL* HELP YOU KEEP YOUR EQUIPMENT OUT OF THE GRAVEYARD.

TO THAT MAGNIFICENT DIESEL WORKHORSE OF YOURS, THE MOST IMPORTANT PERSON IN ALL THE WORLD IS *YOU!*

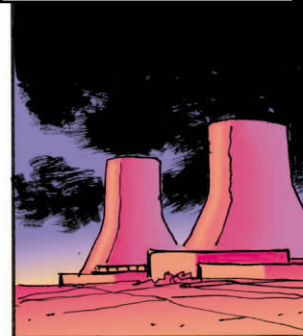


IN 1981, NASA LAUNCHED **COLUMBIA**, THE FIRST SPACE SHUTTLE.

IN 1984, ASTRONAUT BRUCE MCCANDLESS MOVED AROUND SPACE, PHYSICALLY DISCONNECTED FROM HIS SHIP.



THAT SAME YEAR, THE NUCLEAR PLANT IN CHERNOBYL EXPLODED... THREATENING THE LIVES OF 100,000 PEOPLE.



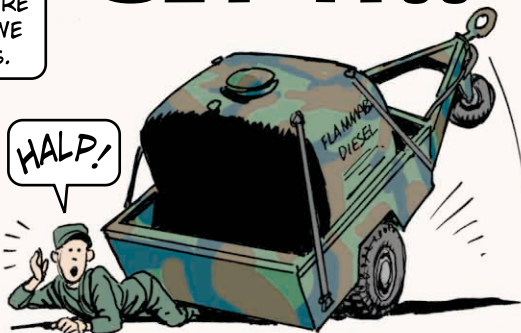
BY THE END OF THE DECADE, THE **BERLIN WALL** HAD BEGUN TO **CRUMBLE**.



THANKS HALF-MAST. I'LL TAKE OVER AWHILE. I'M CONNIE AND I'VE BEEN WORKING WITH PS SINCE THE MAGAZINE BEGAN. BUT DON'T ASK MY AGE-- I WON'T TELL! HERE ARE SOME OTHER THINGS WE COVERED IN THE '80s.



HALP!



REAR LEG NEEDED? GET IT!!

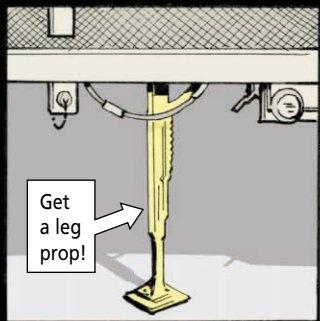
A soldier writes that he nearly lost his legs—maybe even his life—when a heavily-loaded trailer tipped backward as he was getting underneath it—and it pinned his legs to the concrete parking area.

Don't let this happen to you! Get the OK from your CO to add a rear support leg to any of those ¾-ton or 1 ½-ton trailers that carry heavy equipment—like fuel pods, radar, generators, etc.

There're two support legs available. NSN 2590-00-318-6691 and NSN 1450-01-026-4179. They're pretty much the same and do exactly the same job.

With or without a rear support leg, tho, take care where you park your trailer. If it's parked on a slope with the rear downhill, you're asking for trouble. Even that support leg's got its limits.

THIS INFO WAS PUBLISHED IN **PS 343** AND IT STILL MAKES A LOT OF SENSE TODAY.



PS 583

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SHUT THAT FLAP! SAND IS A KILLER TO OUR WEAPONS!

1991

YEAH... I KNOW!

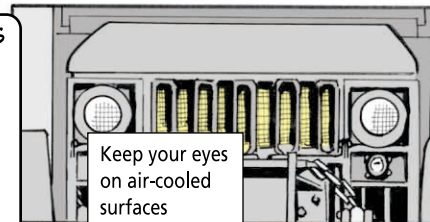
DESERT STORM WAS FOUGHT IN THE BLAZING HEAT AND GRITTY SAND OF THE DESERT. A WHOLE **NEW** SET OF MAINTENANCE RULES WERE PRINTED IN **PS** AND FOLLOWED OUR GUYS OVERSEAS.



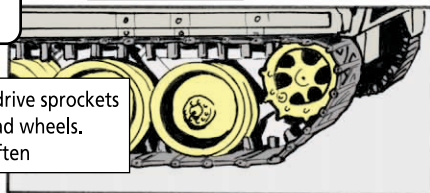
OUR UNIFORMS BLENDED INTO THE DESERT LANDSCAPE, BUT IT TOOK MORE THAN CAMOUFLAGE TO FIGHT THAT WAR!



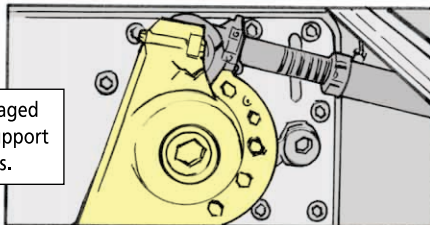
Keep your eyes on air-cooled surfaces



Check drive sprockets and road wheels. Lube often



Look for damaged road wheel support arms and bolts.



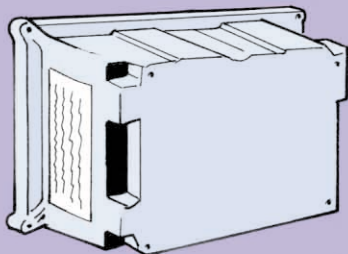
From PS #458, Jan 1991

MUZZLES WERE COVERED WITH A PROTECTIVE DUST CAP BECAUSE **SAND-CLOGGED BARRELS** COULD CAUSE **SEVERE WEAPONS DAMAGE** AND **PERSONAL INJURY**.



HEAT EXTREMES

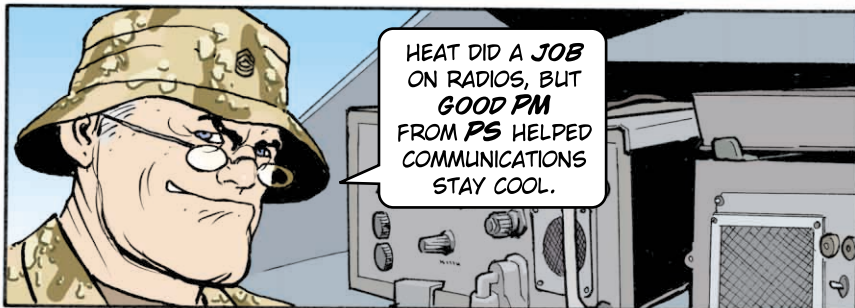
Heat causes great strain on vehicle solid-state electronics. Carry extra regulators for M60-series tanks and M113-series FOV. They go bad.



Keep spare regulators handy

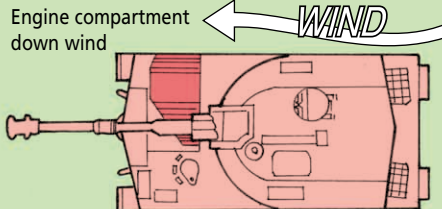
From #458, Jan 1991

HEAT DID A **JOB** ON RADIOS, BUT **GOOD PM** FROM **PS** HELPED COMMUNICATIONS STAY COOL.



WINDS

Flat deserts have high winds, carrying enough grit to shut down maintenance operations. Cover only those areas on which you're working to save shelter space. Park vehicles so the engine compartment is downwind. Use portable shelters.



Engine compartment down wind

From #458, Jan 1991

JUN 01

PS 583

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2001



NOW WE'RE INTO THE NEW MILLENNIUM. THE WHOLE WORLD CELEBRATED WITH FIREWORKS, NOT BOMBS. BUT ... AS LONG AS THERE'S A CHANCE OF TROUBLE, WE'VE GOT TO BE PREPARED... JUST LIKE OUR NEW PRESIDENT GEORGE W. BUSH TELLS US.

THERE'LL ALWAYS BE POCKETS OF VIOLENCE... AND WE'VE GOT TO BE READY.



SOLDIERS STATIONED IN BOSNIA AND OTHER TROUBLE SPOTS NEED **PREVENTIVE MAINTENANCE** ON THEIR EQUIPMENT.



THEY'RE A LONG WAY FROM HOME, BUT **PS** GETS THE WORD TO 'EM.



AND WE'LL CONTINUE TO GET THE LATEST INFO OUT, SO THEIR EQUIPMENT WILL **KEEP ON ROLLIN'.**



From PS 578, Jan 2001

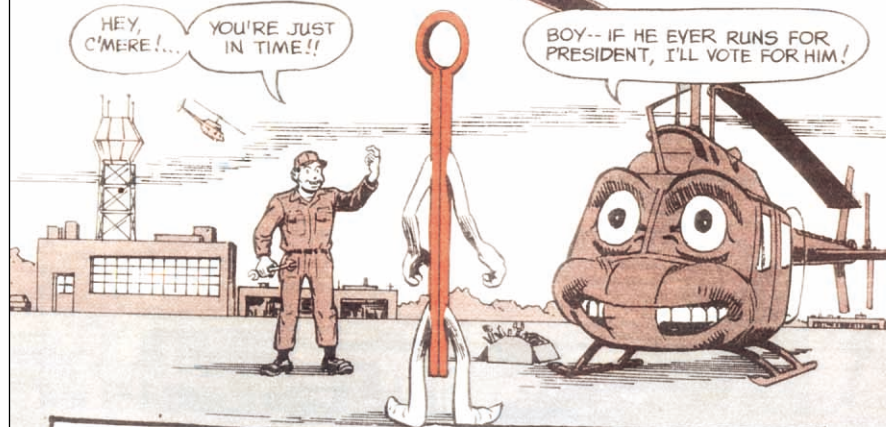
WE'RE ALL LOOKING FORWARD TO THE **NEXT** 50 YEARS OF KEEPING YOU READY AND HELPING YOU MAINTAIN ALL YOUR PIECES OF EQUIPMENT.

WE'LL KEEP GETTING OUT THERE TO LEARN THE INSIDE INFO FROM THE SOLDIERS WHO GET THEIR HANDS DIRTY... THE FOLKS WHO MAKE IT WORK AND TELL IT LIKE IT IS.

LET US KNOW HOW WE'RE DOING AND **CONNIE, BONNIE, WINDY** AND I WILL KEEP TELLING YOU THAT YOU HAVE THE **WORLD'S BEST EQUIPMENT** AND KEEP SHOWING YOU HOW TO KEEP IT THAT WAY!



Cotter Pin Saves Thin Skin



Dear Editor,

For want of a cotter pin the aircraft wasn't lost—but the sheet metal sure took a beating!!

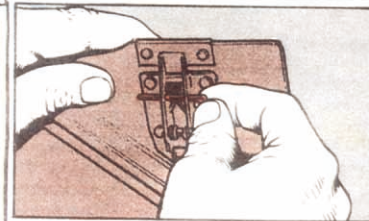
Talkin' about the OH-58 engine cowl side panel and the transmission oil level access door.

When you flip the latches the spring action is strong enough to tear the thin metal behind the latches.



Sure, it's SOP to catch the latches with your fingers. But busy crew chiefs don't always have the time to spare.

Now, it just so happens, there's a set of holes in the back of the spring-loaded latches. The holes are large enough to take a 1/16-in diameter cotter pin, NSN 5315-00-828-8190.



Open the panels and close the latches, before inserting the cotter pin. If the cotter pin is put in the latch when it's in the unlatched position, the spring will be damaged when you attempt to close the latch.

The cotter pin now takes the blow...no more torn metal.

WO1 David R. Brown
Ft. Knox, KY

(Ed Note—Good show! The head hangar recommends the fix to cut down on sheet-metal repair.)

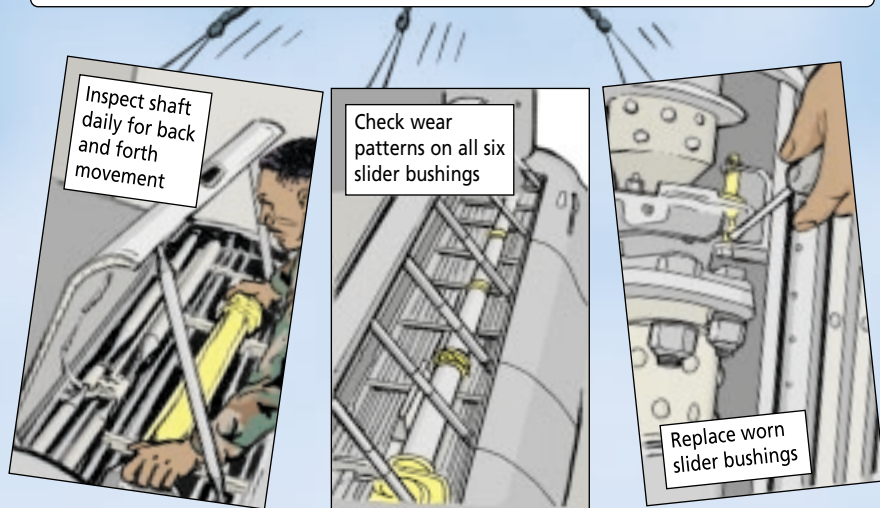
CH-47D...

Don't Skip Shaft Inspections



Mechanics, slingload operations put a heavy demand on Chinook drive shafts.

So, **don't** ignore the daily tunnel inspections spelled out in sequence 13.1 of TM 1-1520-240-PMD. If you let those inspections slip by, you could end up with a shaft that doesn't turn and a frozen transmission.



Over time, the rotor shaft makes grooves on the transmission's slider bushings. As the bushings grind down, the shaft rides in those grooves. That limits the movement of shock mounts and the forward adapter.

Finally, the drive shaft freezes up and the bird goes in for major transmission repairs.

So get your -23 maintenance manual out and do those detailed inspections every day like it says in task 6-10. That'll keep your bird's drive shaft from giving **you** the shaft.

Never let bushings wear this far



CH-47 series...

The M130 Cover-Up



Crew chiefs, you've probably noticed that the cover for your M130 general purpose dispenser has a cover-up problem, on CH-47 aircraft. The cover, NSN 1560-01-271-6463 doesn't protect the dispenser because it's mounted and used exclusively in the flare mode.

That's because the dispenser has two holes not covered by the cover. So the holes funnel rain, melting snow, sand, and debris into the dispenser. That soon corrodes the firing contacts and makes the dispenser NMC.

So get a nylon cover that protects the dispenser in all weather and in both modes with NSN 1730-01-456-2557.

Hold On to FM 1-202

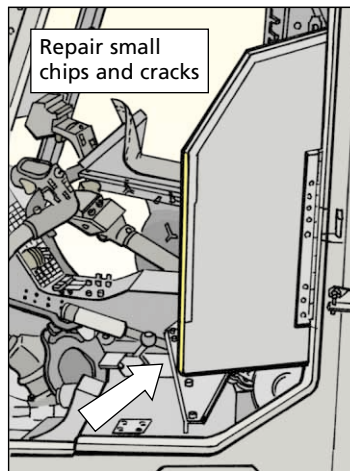
Aviators, on page 37 of PS 575 we told you that FM 1-202, *Environmental Flight*, was being replaced by FM 1-201, *Fundamentals of Flight*. Well, it is, but the publication of the new pub has been delayed. Hold on to your old pubs until FM 1-201 hits the field.

PERFECT PANEL PROTECTION

Crew chiefs, a little PM on the Kiowa's armored side panels could save your hide in a dogfight.

Each panel's ceramic covering takes a real beating from the wind while you're flying. Over time, the adhesive on the back of the cover dries out and gets brittle. The edges will even peel away from the panel. That reduces your protection against enemy fire.

So get out TM 1-1520-248-23 and clean, inspect and repair those panels like it says in Para 2-1-24. If the damage is less than the 1/4-in crack or chip damage limits specified in Para 2-1-24, repair them using adhesive, NSN 8040-00-463-7042. That'll give your panels and you more protection in a battle.



ELSE...

Slippery Switch Kills Batteries

Dear Editor,

We're having constant problems with dead batteries in the new distress marker strobe lights, NSN 6230-01-411-8535, that are carried in survival vests.

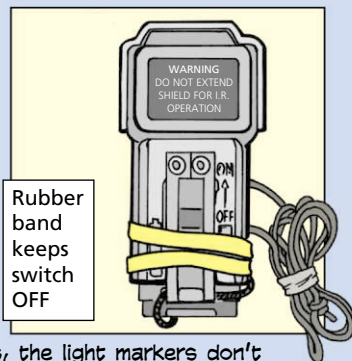
Sling load training exercises require crewmen to scoot around on the aircraft cabin floor with their vests on.

Moving around in that position can trip the light switch and drain the batteries.

Hours later, when crewmen turn in their vests, the light markers don't work. That means you replace a lot of dead AA batteries.

But, we've come up with a quick fix to save batteries. We wrap a sturdy rubber band around the switch before it goes in the vest. That prevents the switch from being accidentally tripped during training exercises.

SGT Jeff Mouser
C Co, 159th Avn Regt
Ft Bragg, NC

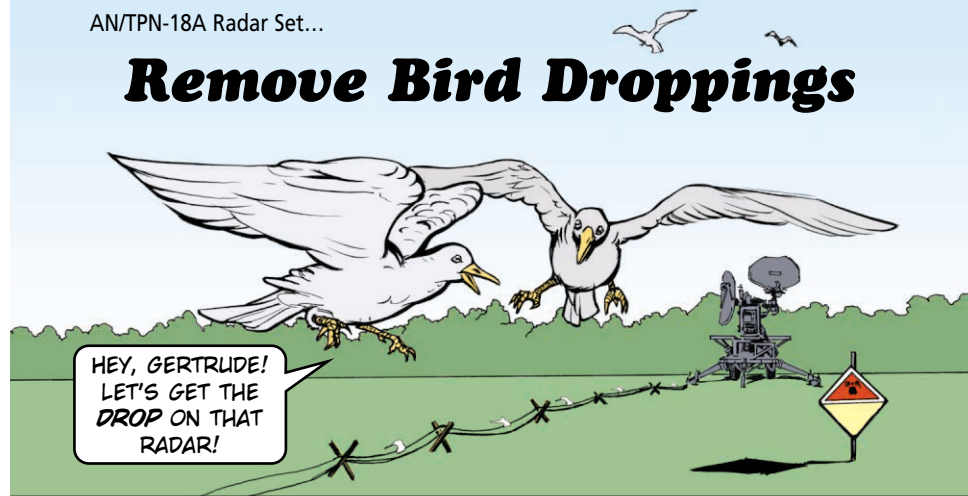


From the desk of the Editor

Good idea! That'll keep the switch in the right place—OFF.

PS 583

Remove Bird Droppings

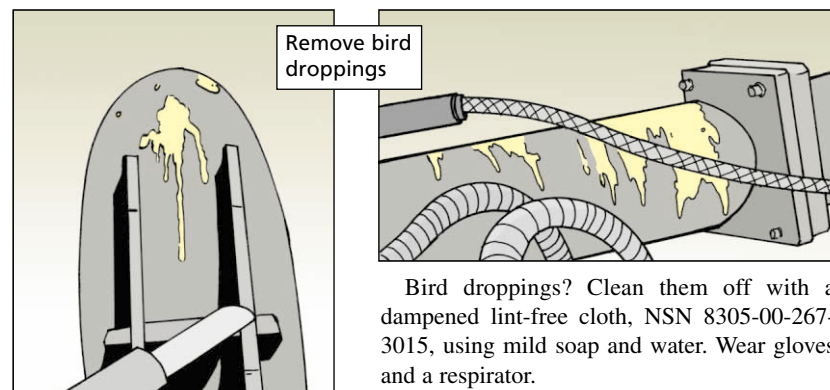


Air traffic control operators, have the birds gotten the drop on your AN/TPN-18A again?

Your radar set sits outside, exposed to heat, snow, rain, wind and ice. So check your equipment daily for peeling paint, corrosion, fungus and damaged or missing cables or connectors. But don't forget those highly corrosive and messy bird droppings. They can eat through paint, wiring, and insulation and corrode metal. That can really do a number on delicate electronic equipment.

That's why PM is the best way to keep radar equipment clean and running no matter what drops out of the sky.

If you operate your equipment daily, clean and inspect it daily, like it says in Para 3-3 of TM 11-5840-281-12-1. Otherwise, do it before and after each use, or at least weekly, if not in use.

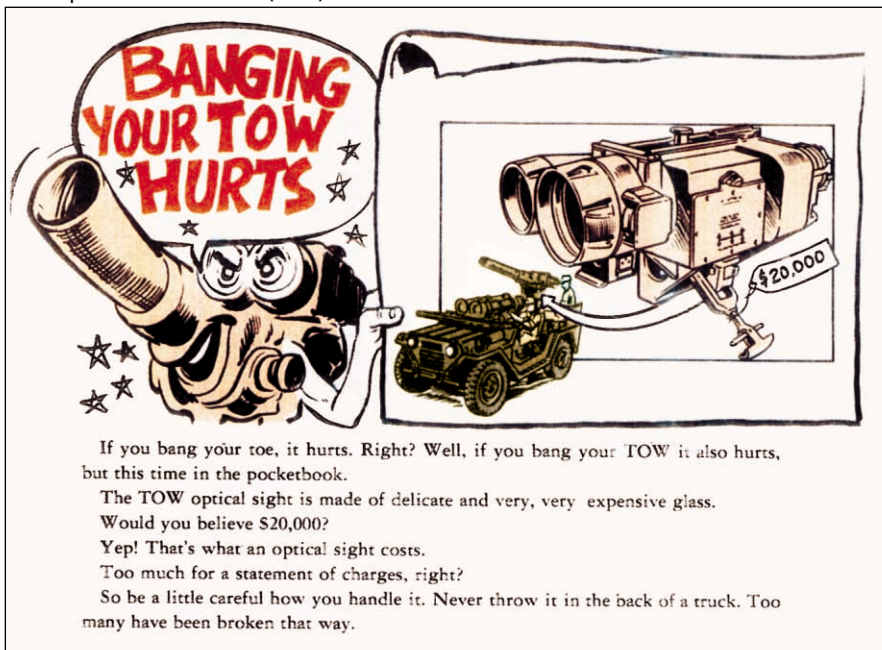


Bird droppings? Clean them off with a dampened lint-free cloth, NSN 8305-00-267-3015, using mild soap and water. Wear gloves and a respirator.

PS 583

41

JUN 01



Avenger Missile System...

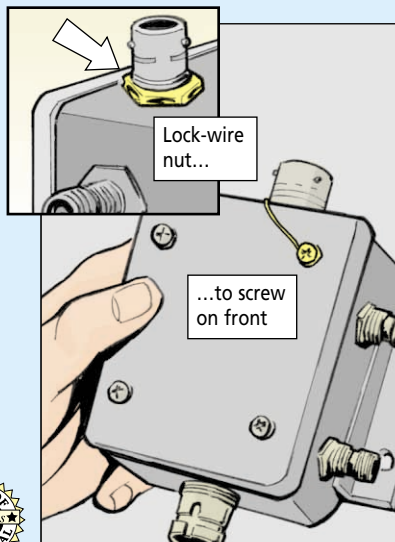
NO MORE IFS ON IFF NUT

Dear Editor,

If the nut for the J4 connector on the *Avenger's Identification Friend or Foe* (IFF) interconnector box works loose and comes off, the connector can actually be pushed inside the box when you plug in its cable. Sometimes the only fix is to get a new interconnector box at a cost of more than \$1,000.

We stopped the nut from loosening and disappearing by lock-wiring it to one of the screws on the front of the box. The connector nut has a slot to run the wire through. Your unit armorer has lock-wire pliers.

SSG Vincent Renaldo
3/62 ADA
Ft Drum, NY



MLRS Launcher...

DON'T JUST CHECK THE ACTUATOR OIL

PUT DOWN THAT RAG, BUDDYBOY!

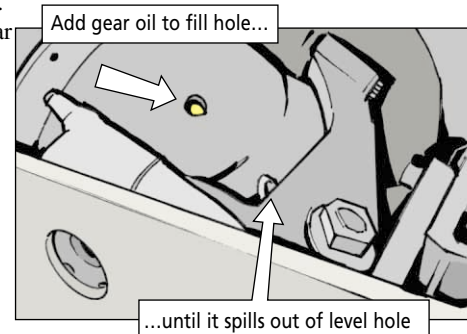
THERE MAY BE PLENTY OF OIL LEFT IN LEFT IN MY ELEVATION ACTUATORS, BUT IT'S DIRTY! YOU'VE GOTTA REPLACE IT!

Mechanics, if the oil in the MLRS launcher's elevation actuator gear housings runs low or gets too dirty, the actuators seize up and the launcher won't elevate.

Just **checking** the oil level annually isn't good enough. You must **replace** it like the -20 TM says. Otherwise that vehicle will turn into a very expensive paperweight.

Here's the drill:

1. Install the jury struts according to the instructions that start on Page 2-89 of TM 9-1425-646-20.
2. Place a drip pan under the gear housing and remove the drain plug. Allow all of the fluid to drain from the housing.
3. Use a clean cloth to wipe off the drain plug. Then reinstall the plug a little more than hand tight.
4. Remove the fill and level plugs.
5. Using a small funnel, pour gear oil, NSN 9150-01-422-9329, into the fill hole until it starts to run out of the level hole.
6. Reinstall the fill and level plugs a little more than hand tight, and wipe off any spilled gear oil. Make sure you dispose of the gear oil in the drip pan in an authorized container.



Watch Your Step. . .



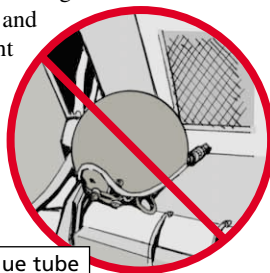
The Avenger was built light and small so it could safely ride on the HMWWV, but that doesn't leave you much room for mistakes. If you put a foot or leave a wrench in the wrong place, expensive damage can quickly result.

So protect your Avenger by following these cautions:



Don't drop stuff in the turret. That can break the sight mount or gunner's hand station switches, and even poke a hole in the turret floor.

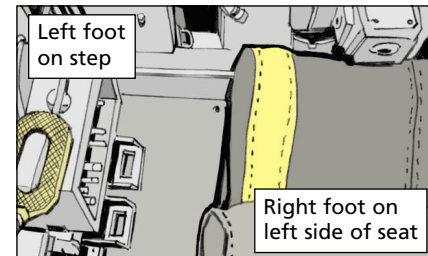
In fact, less is better when it comes to putting equipment in the turret. Duffle bags and rifles bounce around and break items like the sight mount. If you leave your CVC helmet sitting on the torque tube behind the seat, it can rip the sight mount out of the wall when the Avenger's elevated.



Keep helmet off torque tube

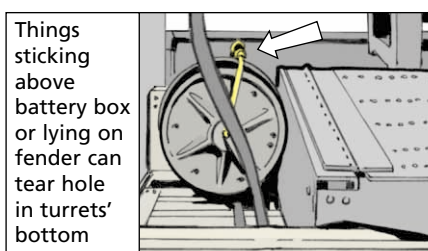
. . . and Your Stuff

Watch your feet. The same things that can be damaged by tossing stuff in the turret can also be damaged if you put your foot in the wrong place. Always climb into the turret by putting your left foot on the step on the side of the turret and your right foot on the left side of the seat. Climb out by reversing that process.



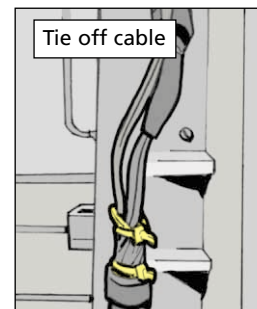
Keep the gunner's compartment clean. Use a shop vac to suck up any dirt on the floor when you come back from the field. If you let dirt pile up on the floor, it can plug the inserts that the seat screws into. Then when you screw in the seat's bolts, the inserts break. Until the inserts are fixed, the seat won't be stable.

Keep stuff off the fenders and don't leave stuff sticking up from the truck bed. The turret clears the fenders by only 1 1/2 inches. If you leave a tool on the fender, it can rip a hole in the turret's bottom when you traverse. Same thing happens if something like a cable reel is left sitting up beside the battery box.



Completely take off the ropes for the antennas when you raise the antennas. If the ropes are left dangling from the antennas, their metal components can bang against the turret and gouge the turret's exterior.

Tie off the remote control unit's (RCU) W80 cable to the RCU brackets. That prevents the cable from being jerked out when you remove the RCU from the truck. It's also a good idea to take the cable out of the truck before you take the RCU out. That makes it easier to remove the RCU without damaging the cable.



MLRS Launcher...

Take Corrosion to the Mat

AHA!
I'VE GOT
YOU NOW!

NOT THIS
TIME, BUSTER!
I'M TAKING
YOU TO
THE MAT!

Face it crewmen, the loader/launcher module (LLM) batteries in your MLRS need all the protection they can get. After all, if they don't work, you won't be firing.

Dirt and water always find a way past the metal cover on the LLM battery box. They coat the batteries with a muddy mess that shortens battery life.

Give the batteries the protection they need by covering them with rubber matting, NSN 9320-01-168-1513. It comes in a 7½-ft long sheet, so cut it to fit the battery box.

The matting keeps water and dirt away from the tops of the batteries. Just lift the mat out carefully and dump any accumulated dirt the next time you open the box to inspect the batteries.



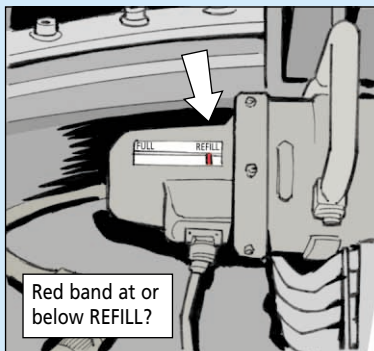
Matting keeps
dirt and water
off batteries

POWER SUPPLY REMINDER

When you shut down your MLRS launcher for the day, don't forget to check the fluid level in the hydraulic power supply.

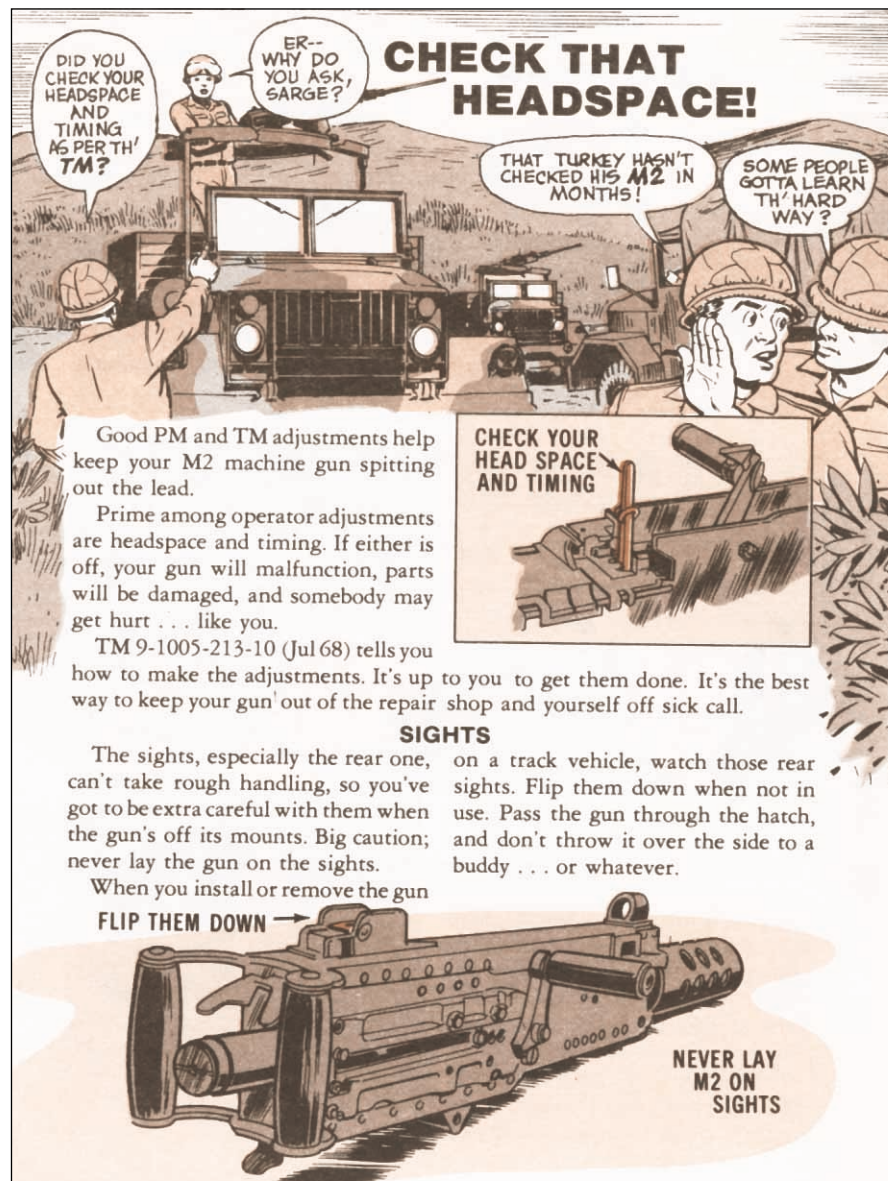
If the level is low, you'll get erratic motion of the launcher during operation. That makes your vehicle NMC.

Eyeball the red fluid level indicator band on the power supply. If the band is at or below the REFILL mark, tell your mechanic. He'll add hydraulic fluid, NSN 9150-00-111-6254, to bring the indicator band back to the FULL mark.



Red band at or
below REFILL?

Reprinted from PS 293 (1977)...



CLEAN WITH THIS PM

WANTED!

CARBON

DEAD OR ALIVE

CARBON IS THE WORST ENEMY OF YOUR RIFLE, MACHINE GUN, OR PISTOL. IT SLOWS DOWN MOVING PARTS AND REDUCES THE CLEARANCE INSIDE THE BARREL. FIGHT CARBON WITH THE CLEANING PROCEDURES IN YOUR OPERATOR TMS AND THESE POINTS.

I DON'T NEED TO WORRY ABOUT CLEANING MY RIFLE. I WAS ONLY FIRING BLANKS.

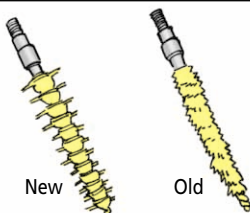
THINK AGAIN, BLINKIE! BLANKS PRODUCE LOTS OF CARBON

Blanks count. Just because you're firing blanks instead of live rounds doesn't mean you can forget carbon. In fact, blanks produce more carbon than live rounds.

After firing blanks, give your weapon a thorough cleaning using chamber and bore brushes, CLP, and cleaning patches (use only RBC on the MK 19). Don't stop cleaning until a patch run through the bore comes out clean.

Pay attention to the cleaning rod and brushes. If the rod and brushes are in bad shape, you'll have trouble cleaning out carbon. If the bore brush moves easily through the barrel and leaves a lot of carbon, the brush is shot.

Worn brushes go through barrel without cleaning carbon



New

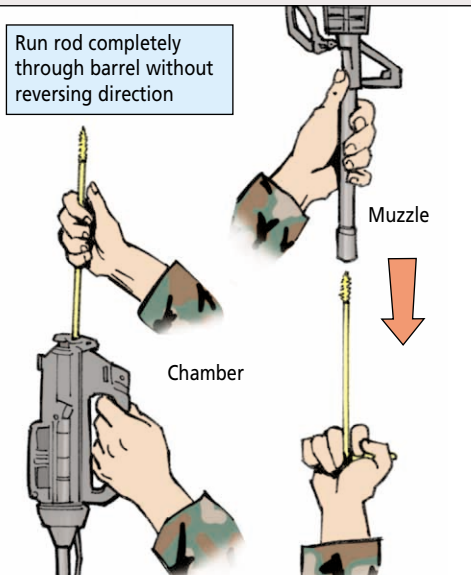
Old

If the cleaning rod sections won't screw together easily or if the rod bends at the joints, you need a new cleaning rod.

Never run the cleaning rod back and forth inside the barrel. That ruins the bore brush and the barrel's grooves. Put the cleaning rod brush or handle in the chamber end and push or pull it all the way out the muzzle end.

Use only the special tools authorized in your TMs to clean the gas system.

Run rod completely through barrel without reversing direction



M16-Series Rifles...

New Swivel Not Needed

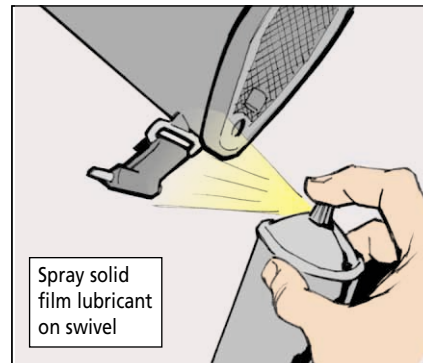
Dear Editor,

When the paint wears off the M16-series rifle's rear sling swivel, most armorers simply replace the swivel. That eliminates the shine that can give you away to the enemy. But it's not necessary. All you need to do is cover up the shine with solid film lubricant.

First, wipe off any dirt or oil on the swivel with a rag. Clean the swivel with dry cleaning solvent, NSN 6850-00-281-1985, then spray on solid film lubricant, NSN 9150-01-260-2534.

Eventually the lube will wear off, but when that happens you just touch up the swivel again. That's always cheaper and easier than replacing the swivel.

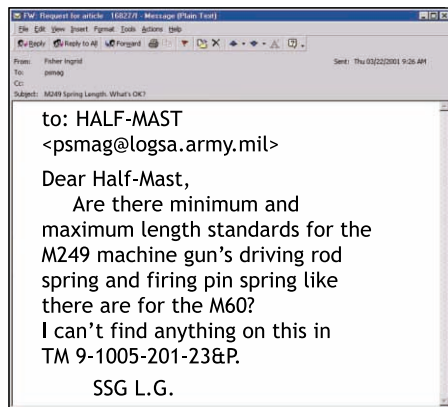
SPC Sean S. Kear
A Co, 52d Engr Bn
Ft Carson, CO



M249 SPRING LENGTH OK?

THIS SPRING IS TOO LONG, BUT WHAT'S THE RIGHT LENGTH?

I'LL E-MAIL HALF-MAST. IF ANYBODY KNOWS, HE DOES!



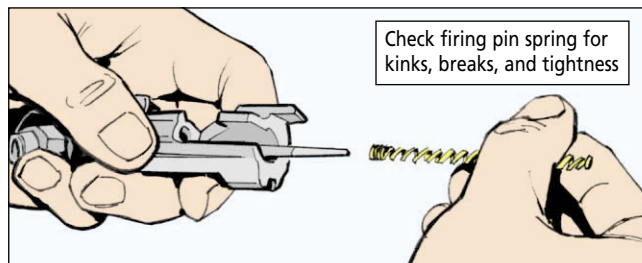
Dear Sergeant L.G.,

No, there is no length standard for either spring. For the driving rod spring (also called helical compression spring), use the criteria in Item 6 in the TM's PMCS on Page 2-4.1: "Check spring for broken strands. Spring should not have more than one broken strand on the same coil, or more than two broken strands, regardless of location, on entire spring."

Check driving rod spring for broken strands

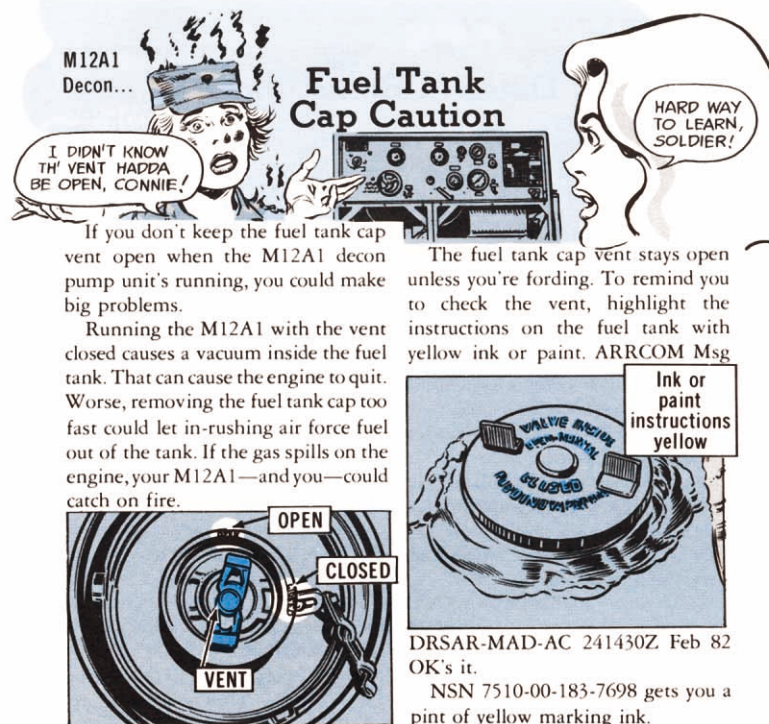


For the firing pin spring, see the criteria in Item 7 of the PMCS: "Check firing pin spring for kinks, breaks and retention capability (tight enough to stay on pin)."



As long as the springs meet these standards, continue to use them.

Half-Mast



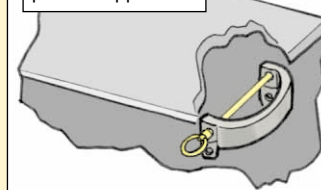
Erase Graphite Loss

Vibration can bounce open an unlocked hatch on the M58 smoke generator IR hopper. Then, when you're driving down the road, graphite starts blowing out of the hopper.

The solution is simple. During your before-operation PMCS, make sure the hopper hatch's locking pin in the crew compartment is in the upper hole. The pin often is left in the lower hole after the hopper is filled, but that lets the hatch come open.

As long as the locking pin is in the upper hole, the hatch can't open.

Make sure locking pin is in upper hole



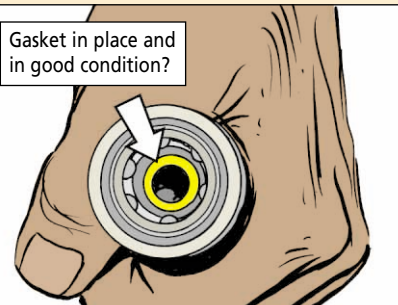
Easier Pumping

One check and a little care can make pumping your M13 decon so much easier.

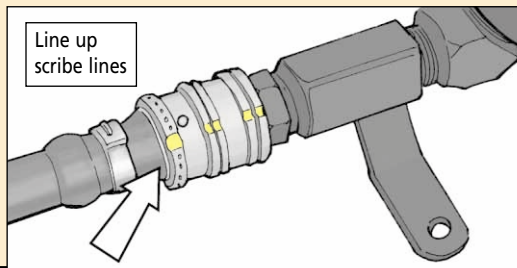
Before you go to the field, check the O-ring in the pump's hose connector. If the O-ring is missing or damaged, you won't be able to build up pressure in the decon. You'll pump and pump without much result. So alert your NBC NCO to a missing or damaged O-ring. To get a new free O-ring, contact Tuan Pham at (309) 782-6949, DSN 793-6949, phamt@ria.army.mil.

When you connect the pump to the container, pay attention to the scribe line on each connector. If you don't line up the lines, the hose isn't properly locked on. That makes for more hard pumping.

Gasket in place and in good condition?

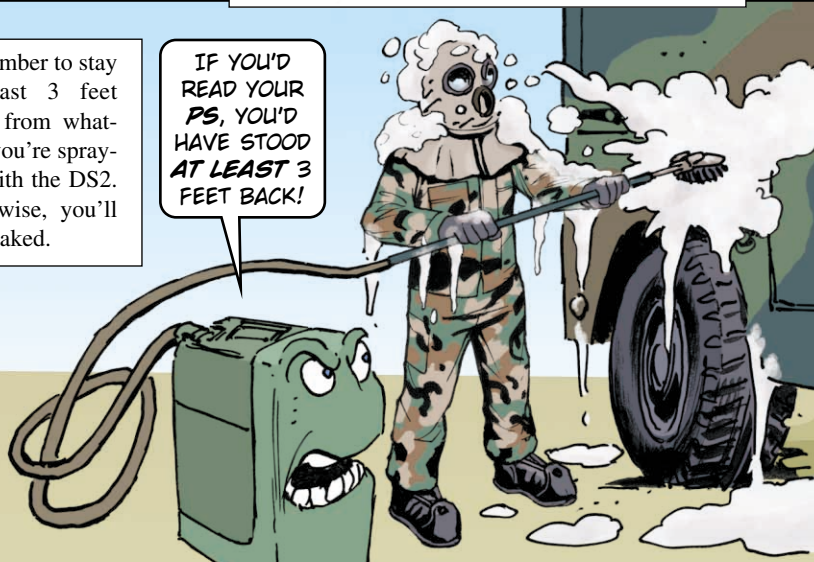


Line up scribe lines



Remember to stay at least 3 feet away from whatever you're spraying with the DS2. Otherwise, you'll get soaked.

IF YOU'D READ YOUR PS, YOU'D HAVE STOOD AT LEAST 3 FEET BACK!



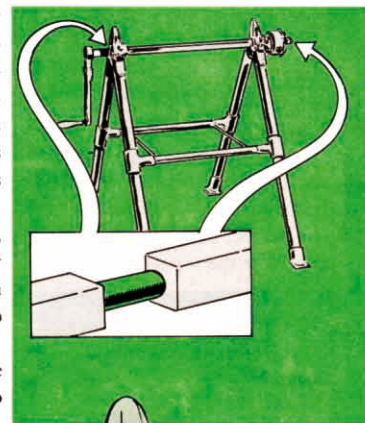
SOME TIPS FOR REEL



Talk all you want about atomic power and such. There're no push buttons around to help drive those RL-31-series(*) reel units. Nothin' but manpower and sweat. When the time comes to pay out some wire—or reel it in—it's the guy with the strong arm who gets results.

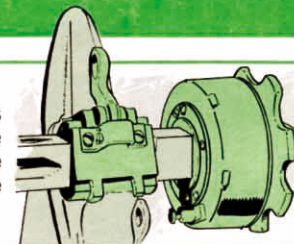
Nice thing about those RL-31's, though, is the fact that there are only two main points of friction. Which means two key lubrication points to keep an eye on. But they are critical.

Because if the axle shaft bearings are rusty, grimy or generally fouled up with dirt, you'll have reel trouble.



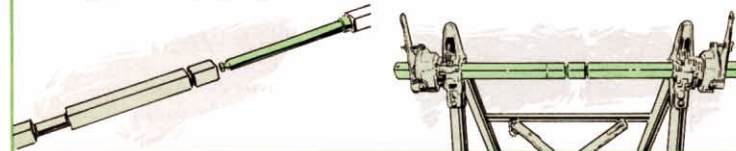
8-HOUR MAINTENANCE

Snap open the bearing caps every eight hours—which is just about every day—and rub some GAA grease on the bearing surfaces. Generously, plenty of it. Then snap the caps shut and wipe off whatever oozes out. Always the risk of extra grease finding its way into the brake.



40-HOUR MAINTENANCE

Once a week (or every 40 hours as the TM says) slip the whole axle off and give it a bath in some cleaning compound. And while you're making with the lubrication, why not walk around the reel unit with an oil can and drop some oil on such spots as the frame hinges, pin catches, the bearing latch hinges, the bearing cap hinges and the crank handle catch.



A little grease and a little oil at the right time and place will keep your unit ready to pay out or reel in when there's time for just one thing: Action!



Senior Citizen PM

(Editor's note: PS first wrote about the TA-312/PT 31 years ago this month in Issue 211. We've covered maintenance issues about it many times since. But as long as it remains one of the workhorses of the Army communications system, and as long as there are "green" troops using it, we'll still put out the good preventive maintenance word.)

If your tough-talkin' TA-312/PT telephone set has wound up in your commo graveyard, chances are good it was killed by moisture.

Operators, after a rain or when humidity is high, remove the canvas cover, dry it out and wipe the set dry. The most critical area to keep dry is the battery compartment. Moisture will corrode batteries and contacts faster than a housefly will land on a chocolate cake.

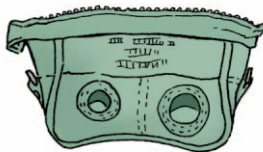
Wipe out the battery compartment with a clean cloth or dry it with low-pressure air. If necessary to handle dirt, use cleaning compound, NSN 6850-00-597-9765. Use a burnisher, NSN 5120-00-255-4458, to clean the contacts.

If water has leaked inside your set, chances are good some of the case screws are loose or missing. Tighten the loose ones and replace the missing ones with new ones, NSN 5305-00-054-6670. Don't forget to order the washer, NSN 5330-00-48-1018, that goes with the screws and gives added moisture protection.

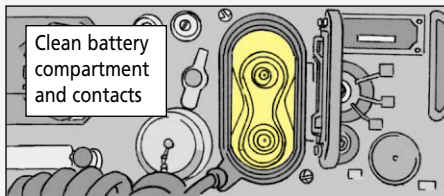
During rain, when possible, keep the set off the ground and covered with a poncho or anything handy.

Always put a drip loop in the field wire before connecting the wire to the binding posts. This will keep dripping water from running right onto the posts. Rubber boots, NSN 5970-00-869-6263, also help keep the binding posts dry.

Remove wet cover and let dry



Clean battery compartment and contacts



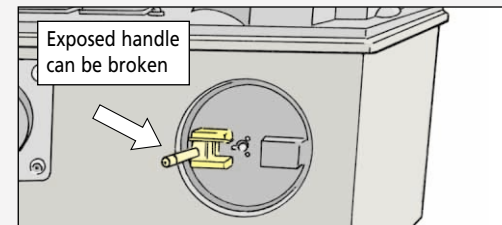
Use rubber caps on binding posts



The de-icing shield, NSN 4130-00-392-7628, that snaps on the mouthpiece of your handset helps not only in freezing weather, but also to keep the mouthpiece dry in high humidity.

Moisture is not the only reason a TA-312 is silenced. Operator carelessness—treating it like it's indestructible—has dealt a death blow many times. Here are a few of the vulnerable areas:

A broken or lost generator handle probably means an operator decided sudden stops or cranking the handle backwards was fun. Or maybe they just forgot to tuck the handle in when they were done cranking.



The handset might seem like a convenient handle for carrying the TA-312. It does until it slips from the cradle and you rip the cord off. Use the carrying strap or lift the whole set.

While the spring isn't meant to hold up the phone, it should secure the handset. To test the retaining clip spring for proper tension, stand the phone on end. If the handset stays in place, the tension's good. If it slips out, the spring is weak. Replace a weak spring with NSN 5805-01-025-8891. The spring was weakened by jerking the handset straight out from the cradle. To remove the handset, push forward and lift up the transmitting end first.

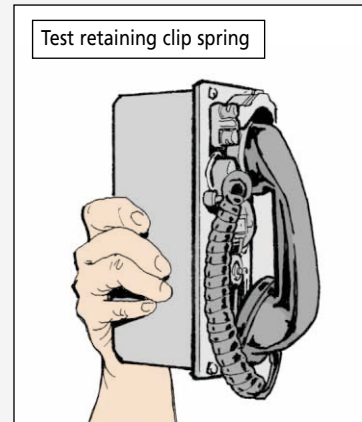
A lot of folks like to doodle while they talk on the phone. TA-312 operators have their own form of doodling—scratching on the designation plate. Some might even think it's creative. But a missing or unreadable designation plate is a repairable part on the telephone and requires the cost and time to replace it.

For TA-312 security, order the security lamp for your TA-312 telephone with NSN 5805-00-782-9210. This also brings a small security label.

You can also get a security warning label, NSN 7690-00-877-6864, that says, **Phone is not disconnected unless handset is seated properly.**

Finally, a caution label, NSN 7690-00-877-6865, is also available. It says, **CAUTION do not strap push-to-talk switch.**

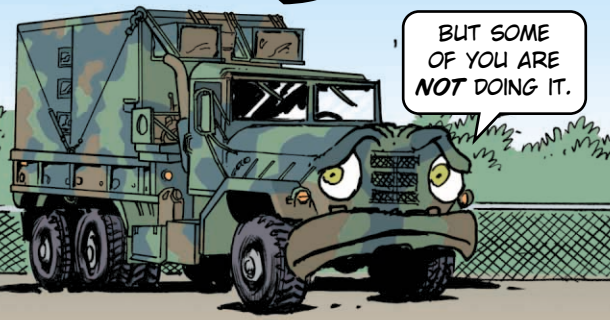
Test retaining clip spring



Making the



OPERATORS,
YOUR MSE SHELTER
NEEDS ITS LEAD-ACID
BACKUP BATTERIES
RECHARGED.



BUT SOME
OF YOU ARE
NOT DOING IT.

Your shelter runs on AC or DC power with two batteries as emergency backup. Some of you have the new maintenance free batteries, but many shelters still have the lead-acid ones. If you lose power from your primary source, the backup batteries will keep the workstation going until primary power can be restored.

But as your shelter sits idle, the voltage level on those lead-acid batteries drops. To make sure you still have your backup ready, you must do an initial load/charge test on the batteries during the AC power initialization procedure like it says in your TM:



HERE'S
HOW TO DO
THAT TEST:

1. Make sure the BATTERY ON BUS indicator and REGULATOR CHARGER ON indicators on the power control panel are on.
2. Set the CURRENT SELECT switch to CHRG (charge).
3. Press and hold the CHARGE-TEST button for 1 minute. After a minute, the DC CURRENT meter will show the charger current. Write down the reading.
4. Release the CHARGE-TEST button.
5. Set the CURRENT SELECT switch to LOAD.
6. Press and hold the CHARGE-TEST button for 1 minute. After a minute, the DC CURRENT meter will show the load current.
7. Subtract the load current from the charger current. If the difference is greater than 5 amps, the batteries need charging.

Charge Equal

Battery Charging

To charge the batteries, press the EQUALIZING CHARGE button on the power control panel. The EQUALIZING CHARGE indicator will come on and the BUS VOLTAGE meter will increase to 28 volts. This starts a 5-hour charge cycle.

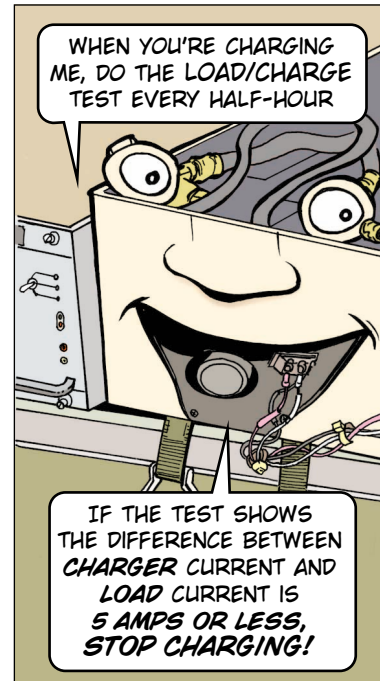
But it may not take the whole 5 hours to charge the batteries! You must monitor the charge by doing the load/charge test every half hour. When the test shows that the difference between the charger current and load current is 5 amps or less, **stop charging!** If you keep the charger running, you'll overcharge the batteries and damage them.

Stop the battery charge cycle by rapidly switching the BATTERY CHARGER circuit breaker OFF and then back ON.

If the difference between the charger current and the load current will not come to within 5 amps after 5 hours, there's a problem with the charging system. Stop the charge cycle. **It's not done automatically!** Then get your support on the job.

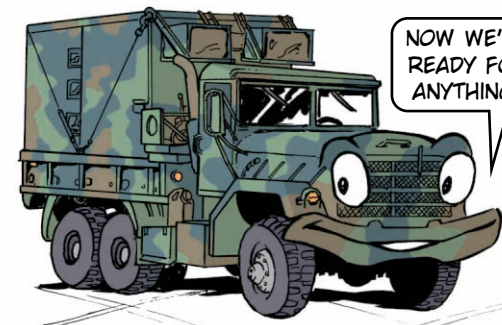
During operation, follow-up load/charge tests should be done at least once a day and at shift changes. But the equalizing/charge cycle must not be done again! It should only be done during the AC power initialization procedure like your TM says.

If your daily or shift-change load/charge test shows the difference between the charger current and the load current is more than 5 amps, do the regulator/battery charger adjustment found in your operator TM. If this does not solve the problem, call your support.



WHEN YOU'RE CHARGING
ME, DO THE LOAD/CHARGE
TEST EVERY HALF-HOUR

IF THE TEST SHOWS
THE DIFFERENCE BETWEEN
CHARGER CURRENT AND
LOAD CURRENT IS
5 AMPS OR LESS,
STOP CHARGING!



NOW WE'RE
READY FOR
ANYTHING!

Everything You Always Wanted to Know About FED LOG



Many folks have no problem with FED LOG NIIN/NSN/PSCN queries because they use 'em all the time. But how about using FED LOG as a research tool? Or using its wild card feature—the asterisk [*]—to get an NSN for the part you need?



Army users should always use the **Army Interactive Query** because that's where you find the AMDF, SB 700-20 and other Army-unique data. Clicking on the green tank gets you there quickly. Then check out these research tips on the most common query types (QT).

* The **Part Number (PN)** query lets you search for items by PN or partial PN.

The standard search can be up to 32 alpha-numeric characters long. You should remove special characters like slashes (/) and dashes (-) since FED LOG will ignore them anyway.

Wild card searches require at least one character followed by the asterisk. Partial PNs use the wild card to search the FED LOG file. All QTs use the asterisk to identify wild card searches and it is always the last character in the input data. The system lists all NSNs that match your part number.

Wild card searches will list all NSNs with a PN that starts with your partial PN input. The wild card is handy when all you have is a partial PN.

* The **Item Name** query lets you search using the name you call the part.

Just input the words you use to identify the part and FED LOG will do the rest. Make sure each word is separated by a comma or space and is no longer than 32 alpha-numeric characters. You need at least one character, then the asterisk and a space or comma between each word to use the wild card.

All NSNs that match the words you input will be listed. Wild card output will include all NSNs that use the partial words in any way within its own item name.

* The **Characteristics** query lets you search by item characteristics—size, voltage ratings, material composition, etc, or with partial characteristics when using the wild card.

Each characteristic can be up to 32 alpha-numeric positions long and must be separated by a comma or space when more than one characteristic is input. The space or comma comes after the asterisk when using the wild card.

All NSNs that use the characteristics you input will be listed. Wild card results will include all NSNs that use the partial data anywhere in its characteristics.

Be sure you limit the use of **Item Name** and **Characteristics** queries to general purpose needs. If the part has any special needs—like material composition and tolerances or precision sizing—contact your local US Army Materiel Command (AMC) Logistics Assistance Office (LAO) for help. They can quickly and accurately ID your parts and help you avoid equipment failure and personnel injury.

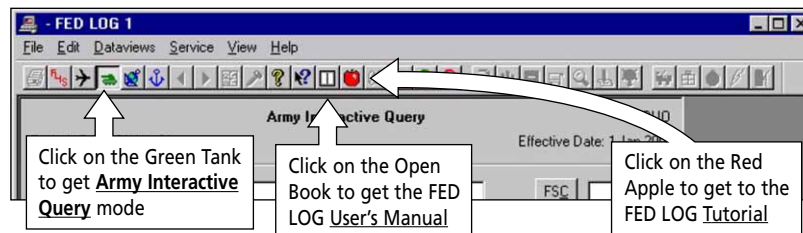
FED LOG even lets you use some QTs together so you can more exactly define your search. The following chart shows which QTs can be used together (identified with the X) or only used individually (identified with the O). The O means that one of the items can be used with the QT and all items with an X, but never at the same time as other O items.

Query Type (QT) Usage Chart

QT	PN	CAGE	SN	IN
Part Number (PN)		O	O	X
CAGE Code (CAGE)	X			
Supplier Name (SN)	X			X
Item Name (IN)	X	O	O	

Thus, the PN query can be used in combination with the IN (X) and either the CAGE (O) or the SN (O) but not both at once since they carry the O.

Increase your understanding of FED LOG by using its tutorial (click on the red apple), its user's manual (click on the open book) or by going to its web site at <http://www.fedlog.com/>.



M939/A1 Wheel Studs

Use NSN 5305-01-132-8274 to get the correct wheel stud for the right-side front wheel on M939/A1-series trucks. Use NSN 5305-01-132-8273 to get the correct wheel stud for the left-side front wheel. The numbers listed for Item 17 in Fig 293 of TM 9-2320-272-24P-1 are wrong. Make a note 'til your TM is updated.

Report M40/M42 Mask MWO

NBC NCOs, if your M40/M42-series masks have been modified by MWO 3-4240-347-20-1, report them to Soldier and Biological Chemical Command (SBCCOM) on DA Forms 2407/5504. See Para 3-8 in DA Pam 738-750 for instructions. The MWO added a zip tie to the outlet valve, which helps hold it in place. Submit the form to your local MWO coordinator or to SBCCOM at:

SBCCOM

ATTN: AMSSB-RS0-LM (Jennie Cook)

Rock Island, IL 61299-7390

If you need kits to modify your masks and a video showing how to do the MWO or if you have other questions, contact SBCCOM at (309) 782-7011, DSN 793-7011 or e-mail cookj4@ria.army.mil.

Bradley Rear Light

Use NSN 5342-01-451-5902 to order a new neoprene resilient mount for your M2/M3-series Bradley's rear light. It replaces the mount shown as Item 96 in Fig 122 of TM 9-2350-252-24P-1 and Item 104 in Fig 139 of TM 9-2350-284-24P-1. The old mount, NSN 5340-00-007-0067, was made of solid rubber that broke down and failed too quickly.

AMSS Correction

The four major monthly AMSS reporting problems are identified in the AMSS article on Pages 55-57 of PS 581. But question three should be: *Is End Item, Weapon System and Sub-system Component Info correct?*

Wipers for M44A2, M809

Want an electric windshield wiper for your older 2 1/2-ton and 5-ton trucks? Accessory kit, NSN 6105-01-461-7073, is available as an OK replacement for air-actuated units on M44A2-series 2 1/2-ton trucks and M809-series 5-ton trucks. TACOM's EIR Digest, TB 43-0001-62-5 (Apr 00), approves this switch so that drivers determine how fast the wipers work, not the engine.

M88A1/A2, M992A2 Fitting

Use NSN 4730-01-444-0303 to get the pipe fitting for the auxiliary power unit hydraulic pump on your M88A1/A2 recovery vehicle and M992A2 ammo carrier. NSN 4730-01-026-0922, which is shown as Item 9 in Fig 267 of TM 9-

2350-256-24P-1, Item 7 in Fig 302 of TM 9-2350-292-24P, and Item 7 in Fig 285 of TM 9-2350-293-24P is too big. Make a note until the TMs are updated.

AMDF, FED LOG Contacts

The AMDF and Army FED LOG addresses and phone numbers at the bottom of page 57 in PS 579 (Feb 01) have changed. For AMDF data, call (256) 955-0574, DSN 645-0574, or e-mail direp@logsa.army.mil. For Army FED LOG distribution and accounts, call (256) 955-0594, DSN 645-0594, or e-mail fedlog@logsa.army.mil. These changes do NOT affect the general FED LOG e-mail, web site and phone number, all of which are correct in PS 579.

HET/PLS Fuel Filter

NSN 2910-01-478-5210 gets the secondary fuel filter for the M1070 HET and M1074/M1075 PLS. This new filter replaces the one shown as Item 2 in Fig 39 of the HET's TM 9-2320-360-24P (May 98) and as Item 5 in Fig 44 of the PLS's TM 9-2320-364-24P (Aug 99). The new filter does a better job of catching contaminants.



PVT Joe Dope



Percy the Skunk



PVT Fosgnoff

**"WOULD YOU STAKE YOUR LIFE RIGHT NOW
ON THE CONDITION OF YOUR EQUIPMENT?"**



SFC Macon Sparks



MSG Bull Dozer

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.